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Beschreibung
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NOISE GENERATOR

SUF2

282.8819

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MANUAL

NOISE GENERATOR SUF 2

282.8819

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2. Preparations for Use and Operating Instructions

2.1 Legend

See Figs. 2-1 (front panel) and 2-2 (rear panel).

No.	Labelling	Function
1	110 kHz 6 MHz 50 MHz RES	Pushbuttons for selecting the noise bandwidth from 20 Hz to (value indicated). If button RES is pressed, the filter option is connected.
2	- +	Pushbuttons for decreasing (-) and increasing (+) the noise level.
3	LEVEL dB	Indication of the noise level (0-dB reference value and sign can be internally link-selected).
4	-0.5 0 dB +0.5	Fine adjustment of noise level. Mid-position calibrated; variation not indicated on display 3.
5	NOISE ON	Pushbutton for enabling and disabling the noise level.
6	REMOTE	LED (yellow) lights up if the remote mode is selected.
7	POWER	Power switch
8	↯	LED (yellow) lights up if one of the supply voltages fails.
9	-	LED (green) lights up when the set is switched on.
10	⊖→ 75 Ω ... V_{RMS} ≙ 0 dB @ 75 Ω	Output; the label below the outputs gives the internally set reference value for 0 dB indication.
11	40 - 63 Hz	Power connector
12	220 V TO,315B. 235V 115 V TO,4B 125 V	Voltage selector with AC supply fuse
13		Shorting link for connecting instrument ground to earth conductor.

No.	Labelling	Function
14	INTERFACE MODE IEC 625 BUS DATA IN	(24-way Amphenol) female connector for remote control. The label located above gives the type of remote control chosen.
15	ADDRESS 5 4 3 2 1 rtl	Switch for address coding (1 to 5) and "rtl" (return-to-local) mode in the case of operation via the IEC-625 bus.

2.2 Preparation for Use

2.2.1 Adjusting the Set to the Local AC Supply Voltage

The set is factory-adjusted to an AC supply voltage of 220 V. Changing over the voltage selector 12 permits the set to be also operated from 115 V/125 V/235 V. For this purpose, the fuse is unscrewed from 12 and the cover of the voltage selector removed. Then the cover is inserted such that the marking points to the required AC supply voltage. After screwing in the corresponding fuse, the set is ready for operation.

2.2.2 Switching on

The SUF 2 is switched on by pressing the power switch 7; after about 3 minutes (= warmup time of the noise source oven), it is ready for operation.

2.2.3 Function Selection (Coding)

See Fig. 2-3.

Selecting the reference voltage for 0 dB

To enable optimum adaptation of the Noise Generator to the measuring problems on hand, the 0-dB reference value can be coded by links. After taking the top half of the case off, the remote control option and the digital section board should be removed by pressing open the plastic hooks. Next undo the four screws to remove the shielding cover of the 75-Ω attenuator so that the two links located next to the output socket are accessible.

Reference voltage for 0 dB	Used as	Links in position
1 V_{rms} into 75 Ω	standard reference +)	Br6 + Br8
0.775 V_{rms} into 75 Ω	audio reference	Br7 + Br8
0.7 V_{rms} into 75 Ω	video reference	Br6 + Br9

+) factory-set

Preset level after the POWER button is pressed

After switching the Noise Generator on, a preset mode is selected, i.e. bandwidth "20 Hz to 6 MHz", NOISE ON, and the level is set by three links.

This level is factory-adjusted to -40 dB, but it can also be set in 10-dB steps between 0 and -70 dB by changing the links.

Required level	0	-10	-20	-30	-40 +)	-50	-60	-70	dB
St5 in position	2-3	2-3	2-3	2-3	2-1	2-1	2-1	2-1	
St6 in position	2-3	2-3	2-1	2-1	2-3	2-3	2-1	2-1	
St7 in position	2-3	2-1	2-3	2-1	2-3	2-1	2-3	2-1	

+) factory-adjusted

Selecting the sign of the level indication

The sign of the level indication can be selected by a link on the digital section board.

Desired sign	without	"-" +)
St4 in position	1-2	2-3

+) factory-adjusted

Selecting the program sequence for the CCIR Rec. 571 Program Option SUF 2-Z6

See Fig. 2-5.

Each program cycle consists of 8 clock periods whose duration can be link-selected. Two link-selected level values between 0 and -99 dB and the "noise off" signal can be assigned to the desired clock periods. Moreover, the filter type can be selected. Fig. 2-5 shows the signal shape and the coding applicable for the factory setting in accordance with CCIR Rec. 571. The remaining tables explain other coding possibilities.

Function	Associated link
Cycle duration	Br1
Filter type	Br2 + Br3
Allocation of "noise off" signal	Br4 + Br5 + Br6
Allocation of level P1	Br7 + Br8 + Br9
Allocation of level P2	Br10 + Br11 + Br12
Level P1	Br13 to Br20
Level P2	Br21 to Br28

The timing reference for the allocation of levels P1 and P2 is the leading edge (negative-going edge from B6, pin 9) of the "noise off/on" pulse.

Pulse inputs on the rear panel of the instrument permit the program sequence to be started and stopped. For the pin allocation of Bu4 see circuit diagram 282.9673 S (lefthand side). After the program sequence is stopped, the SUF 2 switches over to the manual mode.

Selecting the address for the IEC-625-Bus Interface Option SUF 2-Z1

See Fig. 2-6

The row of switches on the rear panel permits the 5-digit listener address to be selected in accordance with the table given in Fig. 2-6. The pin allocation of the 24-way female connector Bu4 and the functions of the pins in the IEC-625 bus are also given in Fig. 2-6.

2.2.4 Fitting the Options

See Fig. 2-3

Opening the instrument

After undoing the four screws, the upper half of the case can be removed.

Fitting the IEC-625-Bus Interface Option SUF 2-Z1

Disconnect the two flat cables, coming from the rear panel, from the digital section board and connect them to the IEC-625-Bus Interface, i.e. change over Bu5 from St9 to St3 and Bu6 from St10 to St2. Bend the flat cables at the edge of the board and lay them on top of the IEC-625 Bus Interface (see Fig. 2-3, lefthand side).

Next plug the IEC-625-Bus Interface board onto the digital section board (St1 to Bu1). Now the Interface board can be snapped into place, the slots at the board edge locking with the plastic hooks. The plastic hooks can be shifted along the grooves in the side panels as required.

Fix the label on the rear panel in the position "IEC 625 Bus" and code the address using the switches (see Fig. 2-4). After setting the "rtl" (return-to-local) switch to Ø, the IEC bus is ready for operation.

Fitting the CCIR Rec. 571 Program Option SUF 2-Z6

For fitting this option, basically proceed in the same way as described in the preceding paragraph. However, only the flat cable at Bu6 has to be changed over from St10 to St2 while the other flat cable is connected as before (Bu5 to St9) after fitting the board. Fix the label with the printed side facing the rear panel.

This program control circuit is factory-set in accordance with CCIR Rec. 571 and is used in conjunction with the option CCIR Rec. 571 Filter SUF 2-Z5. Different program sequences can be selected in accordance with section 2.2.2 and Fig. 2-5.

Fitting the Filter Options SUF 2-Z2/Z3/Z4/Z5/Z7

These options are plugged into the connector St5 on the motherboard (analog section) and snapped in place using the two plastic hooks. For this purpose, the Option SUF 2-Z1 or -Z6, if fitted, should be removed and the digital section board lifted. To remove a Filter Option, lift the connector end; the plastic hooks open automatically when the board is tilted.

2.3 Operating Instructions

See Fig. 2-1

2.3.1 Manual Mode

Status at power-on

After switching the SUF 2 on, the following mode is automatically set; the values specified in the data sheet are reached after about 3 minutes.

Filter type:	20 Hz to 6 MHz (white noise)
Level:	Link-selected value (factory-adjusted to -40 dB)
Level reference:	Link-selected value (factory-adjusted to 0 dB corresponding to V_{rms} = 1 V into 75 Ω
Noise:	on
IEC 625 Bus:	address and "return to local" in accordance with the position of the switches on the rear panel (factory-adjusted: address = "1Ø", rtl = "Ø")
CCIR Rec. 571:	program sequence (factory-adjusted: program in accordance with CCIR Rec. 571)

Based on these basic settings, the required values can be selected:

Filter type

The filter is selected by means of one of the four pushbuttons 1; a LED in the button pressed lights up to indicate the filter selected; this status signal also appears in the case of remote control. It is pointless to press the RES button if no filter option is fitted.

Level

The two pushbuttons 2, "-" and "+", permit the level to be set in 1-dB steps. The level setting pulses are produced by an internal clock generator which switches over to a higher setting speed if the button is held down. The display 3 shows the level set in dB referred to the reference value internally set (0 dB corresponding to V_{rms} = 1 V/0.775 V/0.700 V). The display also operates in the case of remote control. The level can be set down to -80 dB in the 50-MHz range and down to -100 dB in the other ranges. The control 4 permits the output level to be varied by ±0.5 dB.

Noise on/off

Button 5 permits the noise to be switched on and off. With the NOISE ON button pressed, the level displayed on 3 is delivered. If the NOISE ON button is not pressed, the noise source proper is disconnected. However, the attenuator represents a 75-Ω noise source; still, its noise level is at least 20 dB below the permissible setting range and can thus normally be neglected.

2.3.2 Remote Control (Standard)

The parallel remote control facility DATA IN, fitted as a standard, permits the type of filter, level and noise on/off to be selected with the aid of TTL control signals via the female connector 14 (Bu4) on the rear panel.

For the pin allocation, an example of external signal application and the setting tables see Fig. 2-6.

Remote control enabled: Bu4.16 is taken to ground; LED 6 REMOTE on the front panel lights up.

Filter selection: Apply the parallel binary code (F1, F2) representing the desired filter type and store with the 0-V transfer pulse F/N.

Level setting: Apply the parallel BCD code (H1, Z1 to 4, E1 to 4) representing the level value and store with the 0-V transfer pulse D/L.
The fine adjustment control 4 is also effective in the case of remote control, but it cannot be remote-controlled.

Make sure that with a noise bandwidth of 20 Hz to 50 MHz the level entered is not lower than -80 dB and for the remaining ranges not lower than -100 dB. If wrong values have been entered, repeat the entry with the correct values.

Noise on/off: The two control lines ON (I) and OFF (0) permit the noise signal to be enabled and disabled directly by 0-V pulses.

2.3.3 IEC-625-Bus Control

After fitting the IEC-625-Bus Interface Option SUF 2-Z1, the level and noise on/off can be remote-controlled by means of instructions via the IEC-625 bus. For fitting the option see section 2.2.3 and Fig. 2-3; for the pin allocation on the rear connector 14, Bu4, see Fig. 2-4.

The interface operates as a pure listener (function L1).

Selecting the device address

The device address is set with the miniature switches 15 (A5 to A1) on the rear panel in 5-bit binary code in accordance with the table included in Fig. 2-4. Take into account the addresses possible for the bus-controller; an address should never be used twice within a test system.

"rtl" (return-to-local) switch

For use with the IEC-615 bus, this switch must be set to Ø so that the bus-controller is able to set the SUF 2. If manual operation is required temporarily, the "rtl" switch should be set to 1; in this case, the LED 6 REMOTE is dark. This function can be programmed via the IEC bus.

Connecting the SUF 2 to the IEC-625 bus

The SUF 2 is connected to the bus-controller via its 24-way IEC-625-bus connector 14 (Bu4). The pin allocation conforms to the IEC standard so that suitable controllers can be connected directly. When several devices are combined to form a test system, the 24-way programming inputs should be connected in parallel. The connecting cables must conform to the IEC standard, i.e. the wire pairs must be twisted and shielded. Suitable cables with 24-way connectors are available from R & S under the type designation PCK (please specify the length - 0.5/2/2/4 m - when ordering).

Setting commands

The IEC-625-bus interface uses the ISO 7-bit code (ASCII) for data transfer. The programming instructions depend on the bus-controller used. In the following examples, the lefthand column lists BASIC instructions (e.g. for the Tektronix Graphic Computing System 4051 or 4052) and the righthand column instructions for a computer with special IEC-bus facilities (e.g. the R&S Process Controller PPC). The data following the instructions are determined by the IEC-625-Bus Interface SUF 2-Z1 and the set device address (example: address 10).

Filter selection: The filter type is determined by a code number followed by an F (filter) or an N (network).

Code No. Ø: range 20 Hz to 110 kHz 1: range 20 Hz to 6 MHz 2: range 20 Hz to 50 MHz	}	white noise
3: RESERVE for filter option		
PRINT @ 1Ø: "OF"		IEC OUT 1Ø, "ØF"
PRINT @ 1Ø: "ON"		IEC OUT 1Ø, "ON"

These instructions set a noise signal from 20 Hz to 110 kHz.

Level setting: A maximum of three figures followed by a D (attenuation) or L (level) determines the level value in dB; leading zeros need not be entered:

```
PRINT @ 1Ø: "31D"          IEC OUT 1Ø, "31D"
PRINT @ 1Ø: "31L"          IEC OUT 1Ø, "31L"
```

These instructions set a noise level of -31 dB.

Note that the lower level limit is -80 dB for the noise bandwidth 20 Hz to 50 MHz and -100 dB for the other bandwidths.

Noise on/off: A single letter, I for noise on and O for noise off, permits these device functions to be selected.

```
PRINT @ 1Ø: "I"            IEC OUT 1Ø, "I"
PRINT @ 1Ø: "O"            IEC OUT 1Ø, "O"
```

Return to local or local lock-out:

```
WBYTE @ 42, 1:
(42 = 10 + 32)
```

Examples

The individual instructions for filter selection, level setting and noise on/off can be combined to form a single instruction. There are the following programming possibilities for selecting the filter 20 Hz to 6 MHz, the level -37 dB and noise "on":

```
PRINT @ 1Ø: "1F"           IEC OUT 1Ø, "1F"
PRINT @ 1Ø: "37L"          IEC OUT 1Ø, "37L"
PRINT @ 1Ø: "I"            IEC OUT 1Ø, "I"
                    or
PRINT @ 1Ø: "37L1FI"       IEC OUT 1Ø, "37L1FI"
```

Two additional examples are given in Fig. 2-7. The first program increases the noise level in steps until a defined threshold in the test sequence is reached; the second program is used for performance checking of the IEC-625-bus interface. These two programs are written in BASIC for the Tektronix Graphic Computing System 4051.

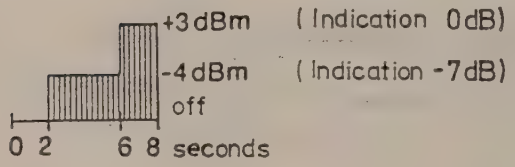
2.3.4 Automatic Program Run (CCIR Rec. 571)

By fitting the CCIR Rec. 571 Program Option SUF 2-Z6, automatic cycling in the output level is possible. The option SUF 2-Z6 is used in conjunction

with the CCIR Rec. 571 Filter Option SUF 2-Z7.
For fitting the option see section 2.2.4 and Fig. 2-3.
For function selection see section 2.2.3 and Fig. 2-4.
For pin allocation of the rear-panel connector 14 (Bu4) see Fig. 2-4.

The SUF 2 is switched to programmed operation by a 0-V pulse ON and signals this state by LED 6 REMOTE. A 0-V pulse OFF terminates the program at the end of the current cycle and switches the SUF 2 back to manual operation. These switching actions can be performed either via separate lines (Bu4.15 = ON, Bu4.11 = OFF) or via a control line (Bu4.17 ON/OFF). In the latter case the external link Bu4.4-Bu4.16 is required.

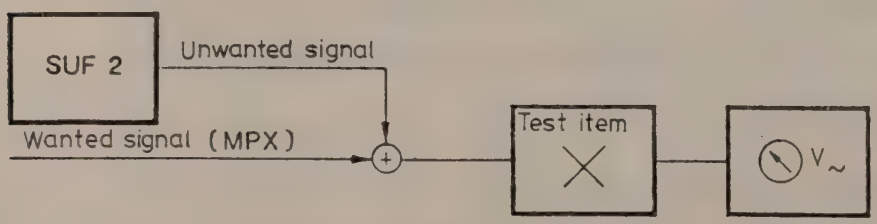
The measuring method in accordance with CCIR Rec. 571 specifies noise levels of +3 dBm (approx. 1.09 V) and -4 dBm (approx. 0.49 V) with a load of 600 Ω. This is achieved in the case of the audio reference (0 dB = 0.775 V) by a series resistor of 173 Ω between the SUF 2 output and the item under test. This test item should have an input impedance of 600 Ω or be adjusted to this value by shunt resistors. This yields the following noise levels:



2.4 Test Methods

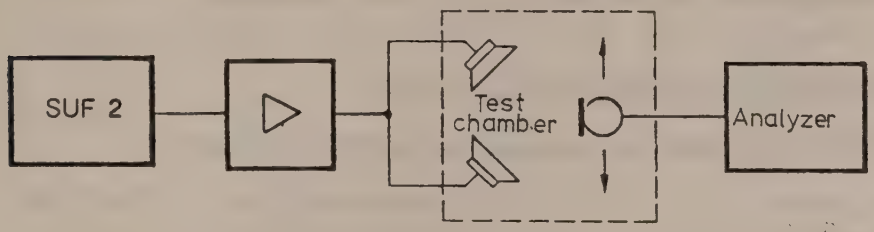
2.4.1 Measurements Using White Noise 20 Hz to 110 kHz

Measurement of noise rejection



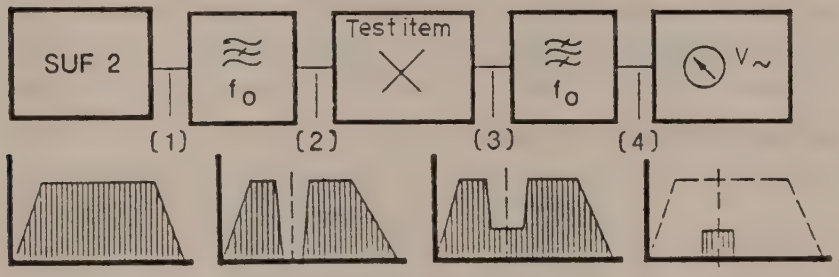
The maximum noise which can be superimposed can be determined in analog frequency-division multiplex systems, such as stereo broadcast and radio transmission systems.

Measurements in architectural acoustics



A listening room is to be checked for unwanted resonances or level dips. For this purpose a noise signal is emitted via a stereo system. A test microphone localizes irregularities in the reproduced sound level so that the appropriate remedy can be carried out, e.g. by varying the positions of the loudspeakers or by fitting sound deadening materials in the room. In a non-resonant room, the radiation characteristics of loudspeakers can be determined by this measuring method.

Harmonic distortion measurements in multi-channel systems



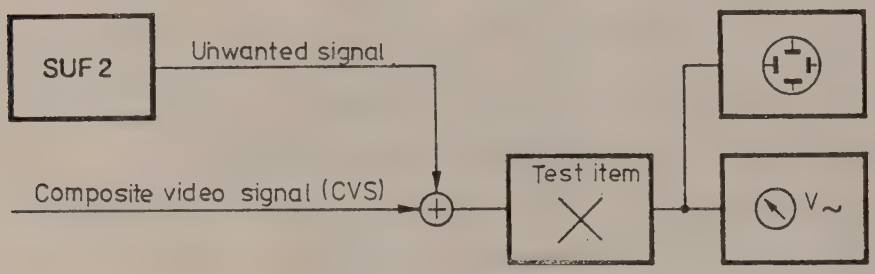
The white noise simulates a carrier frequency band covering a variety of speech signals in frequency-division multiplex with constant power distribution (1). Bandstop filters suppress the frequency ranges of the channels to be measured (2).

Due to nonlinear distortions, noise products appear in these gaps (3). The power in these gaps is determined via bandpass filters or with a selective receiver and is a measure of the harmonic distortion (4).

Since it is necessary to have a constant power distribution over the carrier frequency band in order to detect the exact noise effects on the unused speech channels, a measurement using discrete signals is not possible. This measuring method can be used not only for telephony transmission systems but in all the cases where individual transmission channels up to 50 MHz - i.e. also in CB radio - are to be checked for nonlinear crosstalk.

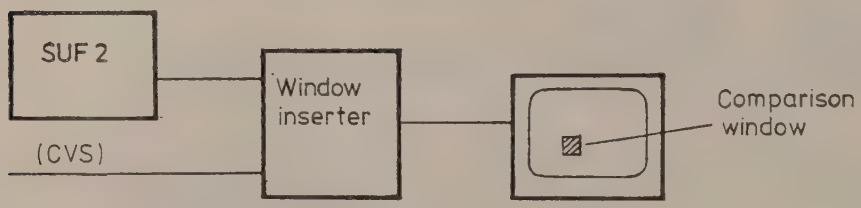
2.4.2 Measurements Using White Noise 20 Hz to 6 MHz

Faulty operation of video equipment in the case of a bad S/N ratio



In the video range it is important to know exactly how far amplifiers, clamping circuits and sync separators are liable to be affected by interference. The SUF 2 makes it easy to determine the threshold up to which unaffected signal processing is possible in the presence of superimposed noise (recommended SUF 2 reference value: 0 dB = V_{rms} = 0.7 V).

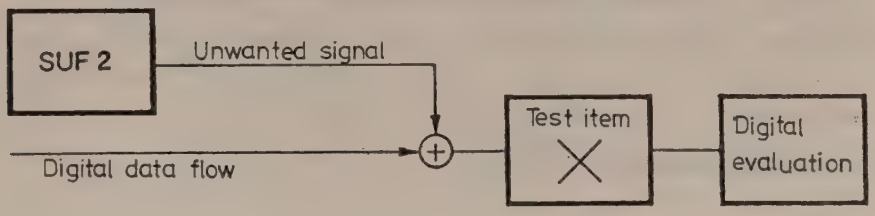
Determination of the subjective video S/N ratio



White noise is inserted into a blanked area or "window" on the screen serving as a reference signal for comparison with the rest of the picture content.

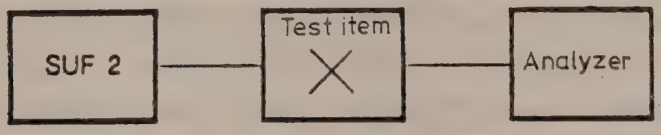
2.4.3 Measurements Using White Noise 20 Hz to 50 MHz

Measurements on digital TV transmission systems



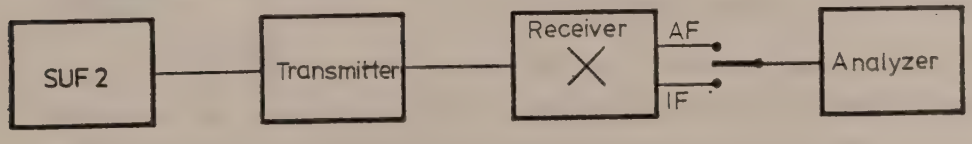
The presently used digital TV systems work with a transmission speed of 34×10^6 bits/second. The SUF 2 covers this frequency range with white noise and thus permits bit error rates to be measured and the performance of error-correction codes to be determined as a function of S/N ratio.

Measurement of frequency response



Basically this measurement is the inverse of the method employed in most cases which uses a swept transmit signal plus wideband indication. By using a noise signal, the device under test is subjected to virtually its normal operating conditions; however, an analyzer is required for evaluation. This method is used for filter measurements in the IF range of vision and sound receivers.

Measurement of receiver selectivity

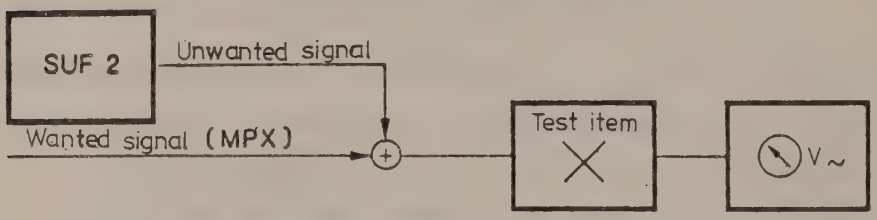


This test setup permits radio equipment to be tested at the RF, IF and AF under conditions which are close to practical operation.

2.4.4 Measurements Using Coloured Noise

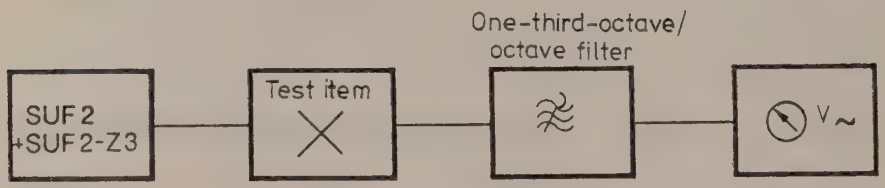
After fitting the corresponding filter option, the SUF 2 permits measurements which, in most cases, conform to the internationally recommended methods. For the frequency response of the test signal concerned see Figs. 4-1 to 4-5.

Triangular noise 0 to 6 MHz (Option SUF 2-Z2)



The spectral distribution of the triangular noise (see Fig. 4-1) shows that the signal level increases proportionally with frequency. This signal permits simple measurements on FM transmission systems (radio links, satellite radio) without requiring RF or IF equipment. After FM demodulation, the noise spectrum corresponds to triangular noise (preemphasis).

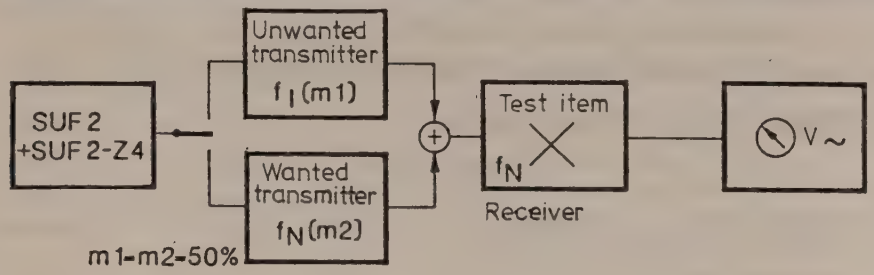
Pink noise 20 Hz to 16 kHz (Option SUF 2-Z3)



The pink noise has a spectral level distribution decreasing by 3 dB/octave from 20 Hz to 16 kHz (see Fig. 4-2). If a one-third-octave or octave filter (e.g. PBT or PBO) is used for the measurement, the same level is obtained in each of the preset frequency bands.

In contrast to the energy content of white noise, that of pink noise remains constant over an octave or one-third octave. To cover the complete AF range up to 16 kHz, ten measurements are required with the octave filter and 30 measurements with the one-third-octave filter.

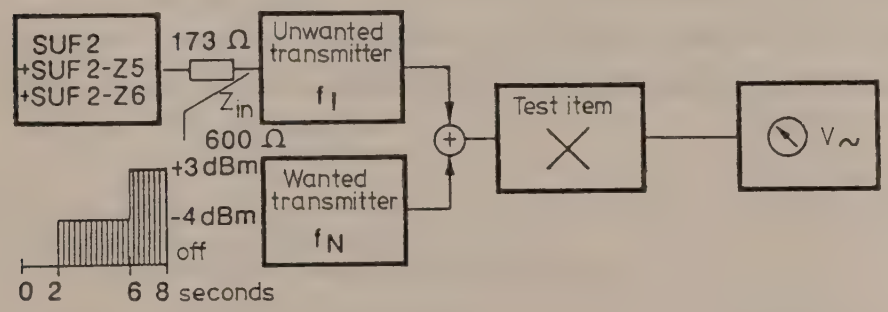
Replacement signal in accordance with CCIR Rec. 559 (Option SUF 2-Z4)



This filter simulates a program signal for 9-kHz AM systems (Fig. 4-3). The method for measuring the protection ratio in accordance with this standard basically consists of alternately modulating the wanted and the unwanted transmitter by the defined "modern dance music" at a modulation depth of 50%.

Both signals are applied to the receiver to be tested. The 0-dB reference level is measured at the audio output of the receiver in accordance with CCIR Rec. 468-2 (e.g. with the UPGR millivoltmeter) when the wanted transmitter is modulated. When the unwanted transmitter is modulated with coloured ("dance-music") noise, the same measuring instrument (e.g. UPGR) indicates the corresponding protection ratio (for more details see CCIR Green Book, vol. X, p. 37 ff).

Replacement signal in accordance with CCIR Rec. 571 (Option SUF 2-Z5)
(in conjunction with the control option CCIR Rec. 571 Program, SUF 2-Z6)



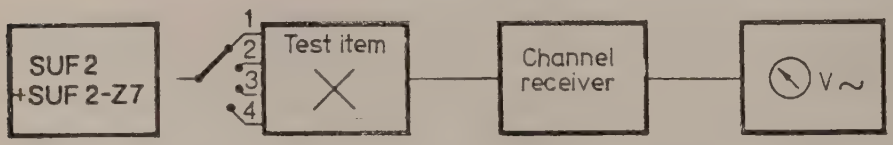
In contrast to CCIR Rec. 559, CCIR Rec. 571 specifies the program cycle to be used for measuring the effects on FM systems of interference in the adjacent channels. Since previous CCIR recommendations provided for a wide level range at the audio input of a radio broadcast transmission

system, CCIR Rec. 571 specifies switchover between two typical level values; in a third mode, the "conventional program signal" is disabled to permit the reference measurement of the interference signal. The levels vary periodically in accordance with the following table:

Mode	Signal level	Duration
1	Noise off	2 s
2	-4 dBm	4 s
3	+3 dBm	2 s

(For more details see CCIR Green Book, vol. XII, p. 114 ff).

Replacement signal in accordance with CCITT Rec. G.227 (Option SUF 2-Z7)



To measure the crosstalk between adjacent telephony channels, CCITT recommends that a "speech replacement signal" represented by a noise spectrum in accordance with Fig. 4-5 be transmitted on the telephony channel. For evaluation, a psophometer is connected to the output of the unused channel. The reference level is obtained with the noise source disabled (for more details see CCITT Orange Book, vol. III-1, p. 145 ff).

3. Maintenance

3.1 Required Measuring Equipment and Accessories

No.	o Required instrument, specifications • Recommended R&S instrument	Type	Ordering No.
1	o Power meter, Z_{in} = 75 Ω, 0 to > 300 MHz		
	• Microwave Power Meter with 75-Ω probe	NRS	100.2432.92 100.2440.70
2	o AF signal generator		
	• AF Generator	SUN 2/S	282.2010.03
3	o Weighted/unweighted AF voltage meter		
	• Level Meter	SUN 2/U	282.4213.03
4	o Wideband voltmeter 40 Hz to 10 MHz for rms- and peak-value measurement		
	• Video Noise Meter with plug-in	UPSF	110.2894.72 110.2907.03
5	o Spectrum analyzer 10 Hz to 60 kHz		
	• Wave Analyzer	FAT 2	100.8690...
6	o Spectrum analyzer 10 kHz to 20 MHz		
	• Videoskop	SWOF 3	110.2620.72
7	o Spectrum analyzer up to about 400 MHz		
	• TV Transcope	MUF 2	337.0013
8	o Oscilloscope 0 to > 20 MHz	-	-
9	• PCB test adapter for filter options	can be made up by customer	-
10	o System controller for IEC-625-Bus Interface Option		
	• Graphic Computing System	Tektronix 4051/4052	
	• Process Controller	PPC	343.3510...
11	• IEC-bus Cable	PCK	292.2013...
12	• Connecting cable (2 x BNC connector)	-	100.6980...

3.2 Performance Checking

Prior to starting the measurement with the Noise Generator SUF 2, allow for a warmup of at least 3 minutes until the noise source has reached its rated temperature. The crest factor rating of the level meter should be taken into account for all rms-value measurements. In most cases it will be sufficient to select a measurement range of $\geq$ 3 V or $\geq$ +10 dBm for measuring 1 V_{rms}.

3.2.1 Measurement in the White Noise Ranges

20 Hz to 50 MHz

For the test setup see Fig. 3-1.
SUF 2 setting: 20 Hz to 50 MHz, 0 dB (V_{rms} = 1 V), noise on.

Frequency response checking: Use an analyzer; flat frequency response up to 50 MHz ($\leq$ -3 dB), then roll-off by > 20 dB/octave until a level of at most -60 dB is reached at 400 MHz.

Level checking: Use a power meter with a 75-Ω load.
Indication: 13.33 mW $\pm$5%.

Checking the noise distribution as a function of amplitude, which should appear as a lens-shaped bright area on the oscilloscope, using the slowest available X deflection ($\geq$ 10 s per screen width).

20 Hz to 6 MHz

For the test setup see Fig. 3-2.
SUF 2 setting: 20 Hz to 6 MHz, 0 dB (V_{rms} = 1 V), noise on.

Frequency response checking: Use an analyzer; flat frequency response up to 6 MHz. Beyond about 8 MHz, the noise should be down 32 dB.

Level checking: Use a wideband voltmeter with a 75-Ω load. Indication: 1 V $\pm$1 dB in the case of rms-value measurements, > 7.1 V (crest factor) in the case of peak-value measurements.

20 Hz to 110 kHz

For the test setup see Fig. 3-2.
SUF 2 setting: 20 Hz to 110 kHz, 0 dB (V_{rms} = 1 V), noise on.

Frequency response checking: Use an analyzer; flat frequency response between 20 Hz and 110 kHz. Starting with about 200 kHz, the noise should be down more than 32 dB.

Once the measurement at low frequencies (20 Hz to about 20 kHz) has been carried out on the bottom range, the results can be assumed to be the same at low frequencies when the ranges 20 Hz to 6 MHz and 20 Hz to 50 MHz are selected.

Level checking: Use an AF level meter with a 75-Ω load.
Indication 1 V ±1 dB in the case of rms-value measurement.

3.2.2 Measurement in the Coloured Noise Ranges

Triangular Noise Option SUF 2-Z2

For the test setup see Fig. 3-2.
SUF 2 setting: RES, 0 dB (V_{rms} = 1 V), noise on.

Frequency response checking: Use an analyzer with linear level display. A linearly increasing frequency response with a permissible variation of 5% referred to the value (100%) at 6 MHz should be obtained. Starting with about 8 MHz, the noise should be down more than 20 dB. See the table in Fig. 4-1.

Level checking: Use a wideband voltmeter with a 75-Ω load. Indication: 1 V ±0.5 dB in the case of rms-value measurement.

Pink Noise	Option SUF 2-Z3
CCIR Rec. 559 Filter	Option SUF 2-Z4
CCIR Rec. 571 Filter	Option SUF 2-Z5
CCITT Rec. G. 227 Filter	Option SUF 2-Z7

For the test setup see Fig. 3-3.
SUF 2 setting: RES, 0 dB (V_{rms} = 1 V), noise on.

Frequency response checking: Use an analyzer. The frequency response shown in Figs. 4-2 to 4-5 should be obtained.

Level checking: Use an AF level meter with a 75-Ω load.
Indication: 1 V ±0.5 dB in the case of rms-value measurement.

For accurate frequency response measurement, the filter option should be operated in a test setup as shown in Fig. 3-4. For the individual values, see the tables in Figs. 4-2 to 4-5. Make sure that the permissible input voltages are used.

3.2.3 Checking the Manual Operation

Switch the SUF 2 on. The level set internally for POWER ON should be indicated and the range 20 Hz to 6 MHz selected.

Switch over to the range 20 Hz to 50 MHz and press the level button "-". At first the switching rate is 3 dB/second, after about 2 seconds it is 30 dB/second, i.e. starting at -40 dB the final value of -80 dB is reached after about 4 seconds.

Switch over to the range 20 Hz to 110 kHz and press the level button "-". The final value of -100 dB is reached. When switching over to RES, the indication should not vary.

Switch over to the range 20 Hz to 50 MHz. The level is automatically switched over to -80 dB (permissible minimum value for this range). Next press the level button "+" until the final value of 0 dB is reached.

3.2.4 Remote Control

Parallel DATA IN remote control facility

Connect pin Bu4.16 to ground. This sets the SUF 2 for remote control, i.e. LED REMOTE is on and manual operation is inhibited. If required, proceed with performance checking in accordance with Fig. 2-6.

IEC-625-Bus Interface Option SUF 2-Z1

With the "rtl" switch on the rear panel set to "1", manual operation should be possible. Then put this switch to "Ø" and, if required, check the performance in accordance with Fig. 2-7 "test program for IEC-625-Bus Interface".

CCIR Rec. 571 Program Option SUF 2-Z6

Connect an oscilloscope to the front-panel output and check the operational cycle. The ON pulse should be present at Bu4.15 and the OFF pulse at Bu4.11. See Fig. 2-5. During the automatic sequence, manual operation is inhibited and the LED REMOTE is on.

4. Circuit Description

4.1 Power Supply

See circuit diagram 282.9115 S, sheet 1.

The power supply delivers the three supply voltages of +12 V, -12 V and +5 V. The 0-V line of the +5-V section is run separately to avoid hum loops when IEC-625-bus controllers are connected.

4.1.1 +12-V and -12-V Supply Voltages

The centre-tapped full-wave rectifier G1 2 produces the two raw supply voltages. These are stabilized to +18 V and -18 V with T5/G1 6 and T6/G1 5 and applied to the two feedback amplifiers B1.I and B1.II. The tracking principle permits the two voltages to be adjusted simultaneously with one potentiometer, only one reference voltage source being required.

The feedback amplifier B1.II for the +12-V section compares the reference voltage of Zener diode G1 7 with the fraction of the output voltage determined by R14/R13/R15. The output voltage is kept constant at about +12 V (checkpoint Br3) via T1 and T8.

In the -12-V section, the feedback amplifier B1.I compares the constant voltage of about +5 V (across R10/R11) with the voltage from divider R8/R9 and keeps the output voltage constant at about -12 V via T2 and T7.

4.1.2 +5-V Supply Voltage

The bridge rectifier G1 3 feeds the +5-V section. The feedback amplifier B3 compares a fraction of the output voltage (R19/R20/R21) with the reference voltage across G1 8 (approx. 3.9 V) and keeps the output voltage constant via T4 and T9.

4.1.3 Monitoring the Supply Voltages

The two opto-couplers B2 and B4 monitor the -12-V and +5-V supply voltages. If one of the two voltages is faulty, the "fault" LED on the front panel is switched on via T3. Since the +12-V and -12-V sections are coupled, the +12-V supply voltage is included in the monitoring procedure.

4.2 Analog Section

See circuit diagram 282.9115 S, sheets 2 and 3

4.2.1 Noise Source

The noise source is the avalanche-discharge base-emitter junction of transistor T11. This diode is connected between the two low-impedance points, i.e. the emitter of the temperature-controlled transistor T10 and the current summing point of amplifier B5. In this way, an accurately defined broadband noise signal is obtained. The current flowing through the diode determines the noise amplitude and can be adjusted with R40 and, if required, with R39.

B6 and T12 amplify the noise voltage delivered by B5 and permit the frequency response to be corrected with R37 and R47 whereas R43 is used for calibrating the noise power (20 Hz to 50 MHz).

The equalizer comprising T13 and T14 suppresses the flicker noise of the noise diode reaching up to about 2 kHz and can be adjusted with R51 and R55. The feedback amplifier B7.I stabilizes the mean noise amplitude via B5 (about 1 mV_{rms} at the emitter of T14).

To keep the noise power delivered constant, the noise source (T10 + T11) is temperature-controlled. The feedback amplifier B7.II drives the heating transistor T21, T22 being used as a temperature sensor.

The voltage dividers T23/G1 16 and T24/G1 17 produce the supply voltages of +8 V and -8 V for the circuit section described above.

4.2.2 Filters

The noise signal derived from the emitter of T14 is taken to the output stage via different paths depending on the bandwidth selected:

20 Hz to 110 kHz:	Rs7, 6-MHz lowpass filter, amplifier B8/T15, 110-kHz lowpass filter, amplifier B9, Rs9
20 Hz to 6 MHz:	Rs7, 6-MHz lowpass filter, amplifier B8/T15, Rs6 + Rs8
20 Hz to 50 MHz:	Rs3, Rs5, Rs8
RES (= option):	St5.1, filter option, St5.10 (Rs3 open-circuit), Rs5 + Rs8

The gain of the above signal paths is adjusted such that a noise signal of 0.1 V_{rms} is present at the input of the output stage. Potentiometers R91

and R102 permit compensation of the DC offset referred to the mean noise signal at the emitter of T14.

The NAND gates in chip B11, and the two diodes G1 22 and G1 23, are used for driving the relays.

4.2.3 Output Stage

The output stage amplifies the noise signal to 2 V_{rms} (EMF). The feedback amplifier B10.I +.II maintains the mean signal value at the output of this stage at 0 V.

4.2.4 Attenuator

The attenuator consists of attenuator networks set in seven binary steps from 1 to 64 dB. Relays Rs11 to Rs29 are used for switching over the individual attenuators whereas the two relays Rs30 and Rs31 permit the noise signal to be completely turned off.

In conjunction with the links Br6-Br8, the two attenuators (2.23 dB and 3 dB) enable the reference level for 0 dB to be set.

Link Br10 is provided to aid servicing. If this link is removed, the two relay contacts Rs30 and Rs31 are open with NOISE ON and the attenuator can be measured between Bu11 and Bu12.

4.3 Digital Section

See circuit diagram 282.9515 S.

4.3.1 Bandwidth Selection

Pressing one of the buttons S1 to S4 switches one input of the switchable 4-bit memory B3 from +5 V to 0 V. This level change causes B5 and B4.3 to produce a clock pulse which transfers the bit which has been set into the memory. Next driver B1 switches over the corresponding relays of the noise source.

In the case of remote control, a bit pattern corresponding to the desired bandwidth is present at the two inputs of the 2-to-4-line decoder B2; after decoding, this signal is applied to the 4-bit memory via the local/remote line. A "data valid" pulse (F/N) produces via B4.1,2 the transfer clock pulse.

After "power on - reset" delivered by B26 and B22.2, the bandwidth 20 Hz to 6 MHz is always selected via G1 16.

4.3.2 On/Off Control

Pressing button S7 (NOISE ON) produces, via B12.3 and B12.4, a clock pulse which switches the Q output of flipflop B9 from L to H or from H to L. The LED incorporated in the button indicates the switching state of the flip-flop; B10.2 and B10.3 actuate the relays Rs30 and Rs31. In the case of "noise off", B10.1 connects the 64-dB attenuator.

With each change of the selected noise level, monostable B11.2 delivers a 100-ms pulse and turns off the noise signal via B10.2 and B10.3. In this way, high noise levels caused by non-simultaneous relay switching or contact chatter are avoided.

In the case of remote control, B9 functions as an RS flipflop and can be driven via inverters B14.2 and B14.3 and NAND gates B12.2 and B12.1, by establishing momentary contacts to ground at St10.9 and St10.7.

4.3.3 Level Control and Indication

Oscillator and BCD counter

Pressing one of the buttons S5 or S6 causes the 3-Hz oscillator B25.1 + .2 to start oscillating via B21.1 and B21.4. If the button is held down, B22.1 and T1 switch the frequency over to about 30 Hz. The switchover delay is determined by the RC network R38/C8.

Latch B21.2 + .4 recognizes the desired count direction for the BCD up/down counter B16 + B17 + B18. It is driven by the clock pulses from the 3-Hz (30-Hz) oscillator B25.I + .II. If the buttons are not pressed, the desired level value is thus stored in the counter.

Level indication

The counter outputs are connected to the digital readouts B1 to B3 via the 7-segment decoders B6 and B7 (tens and units) and via the inverter B8.3 (hundreds). Thus the level setting can be observed immediately.

The link at St4 causes the desired polarity sign of the level indication to appear.

Controlling the attenuator

The level values stored in the BCD counter must be available in binary form to drive the attenuator; EPROM B16 is used for this conversion.

The nine BCD lines are taken to the memory chip as the addresses AØ to A8. The associated bit pattern appears at the data outputs. Since the LSB is the same in BCD and in the binary form, only 6 data lines are required for this conversion.

The seventh data line is used for suppressing the leading zero on the front-panel display.

The eighth data line inhibits the clock of the BCD counter in the case of overranging and ensures that only levels between 0 and 100 dB or 0 and 80 dB can be set (based on address line A9 which is activated by button 20 Hz to 50 MHz).

Remote control

The level information is taken in parallel, via the tristate drivers B19.I to 5 and B20.3 to 6, to the set inputs of the BCD counter. The "data valid" pulse ("D/L" at St10.3) transfers the level information into the BCD counter. The level indication and the control of the attenuator are the same as described above.

NOTE: If unacceptable level values (= addresses of the EPROM) are applied, the six highest attenuator networks are always connected.

Level setting after "power on"

At switch-on, the outputs of the tristate drivers B19 and B20 are high-impedance. Thus the parallel inputs of the BCD counter receive a bit pattern which is preset by the resistor network R56 and the links at St5, St6 and St7. During this period, the ON monitor B26.2 delivers a "data valid" replacement pulse and stores this level value. The level can be link-pre-selected in 10-dB steps between 0 and -70 dB.

4.4 Filters for Coloured Noise (Options)

The filters, which can be inserted or exchanged without any adjustment, are fitted with a relay at the input and output. When button RES is pressed, these relays are energized and the signal path is through-connected whereas relay Rs3 (noise source board) is not energized.

4.4.1 Triangular Noise 0 to 6 MHz, SUF 2-Z2

See circuit diagram 282.9715 S.

The signal, which is band-limited via L1 and C1, is applied, via emitter follower T1, to the input of a 6-MHz lowpass filter. The current flowing to the 0-Ω point of the output amplifier T2, T3, T4 is further processed by C9 (at the output of the lowpass filter). This current increases proportionally with the frequency. Thus it produces the desired triangular noise at the emitter of T4. C3 is used to linearize the frequency-dependent voltage rise at the emitter of T4. R6 is used for gain adjustment.

4.4.2 Pink Noise 20 Hz to 16 kHz, SUF 2-Z3

See circuit diagram 282.9815 S.

The noise components above about 50 kHz are attenuated by R1 and C1 before B1.1 amplifies the noise signal by approx. 36 dB. The R/C network included in the negative-feedback path of the cascaded amplifier B1.2 attenuates the spectral components of the noise between 20 Hz and 16 kHz by 3 dB/ octave. R9 determines the gain.

4.4.3 CCIR Rec. 559 Filter, SUF 2-Z4

See circuit diagram 282.9644 S.

The frequency response is determined by the RC coupling between the amplifiers B1.2, B1.1 and B1.4 and the active high-pass filter including B1.3. R9 is selected for gain adjustment.

4.4.4 CCIR Rec. 571 Filter, SUF 2-Z5

See circuit diagram 282.9644 S.

After preamplification with B1.2, the active lowpass filter including B1.1 attenuates the high-frequency noise components. The RC network R5/C1 produces an additional inflection point at about 800 Hz. Following amplifier B1.4, the active highpass filter including B1.3 shapes the rising edge of the passband characteristic.

4.4.5 CCITT Rec. G.227 Filter, SUF 2-Z7

See circuit diagram 282.9615 S.

Basically this filter operates in the same way as described in section 4.4.4. However, it contains different circuit components to produce the desired shape of the passband characteristic.

4.4.6 Other Filters

Basically the space provided for the filter options can be used for inserting any other filter; however, the basic filter design, i.e. a relay at the input and output, should be maintained. In this way, different shapes of the passband characteristic and simple band limiting up to max. 50 MHz are made possible.

4.5 IEC-625-Bus Interface, SUF 2-Z1

See circuit diagram 282.9915 S.

The heart of this option for the listen-only mode (L1) is chip B4 which handles the complete management and handshake program for the IEC-625 bus. For this purpose, the 400-kHz oscillator (B3.3, 4, 5, 6) and the parallel-in/serial-out shift register (B6 and B7) are required.

The oscillator determines the data transmission speed. In the serial mode, chip B4 receives from the register all the required device data, such as the device address (to be set with S1 on the rear panel), the "return-to-local" signal and the "listen-only" mode.

Chip B5 decodes from the ISO 7-bit code of the IEC-625 bus the range of the upper-case letters. The 4 low-order bits of this code are transferred in the serial mode to registers B11 and B12 and are available in parallel at the outputs. If, in conjunction with B5, decoder gates B10 and B13 recognize one of the upper-case letters (I/O/D/L/F/N) which cause the "data valid" pulse, the digital section accepts the previously transmitted information. Next B14 resets the outputs of registers B11 and B12 to low.

This resetting is also caused by the BASIC instruction INIT and the IEC-625-bus command WBYTE @ < addr. +32 >, 20:

4.6 CCIR Rec. 571 Program, SUF 2-Z6

See circuit diagram 282.9673 S.

In accordance with the recommendation, this option repeatedly switches the noise level at preset intervals. The time sequence and the level can be link-selected.

An external low pulse sets flipflop B1 and starts oscillator B3I + II.
In accordance with the setting of link Br1, dividers B4.I and B4.II deliver the clock period of 0.5/1/2 or 4 s. 8 clock periods constitute a complete cycle.

The following settings are possible with links Br4 to Br12:

Br4, Br5 (Br6):	determination of the interval for NOISE OFF (controlling Rs30 + Rs31 of the attenuator)
Br7, Br8, Br9:	output of the first level which is selected by Br13 to Br20 in 1-dB steps
Br10, Br11, Br12:	output of the second level which is selected by Br21 to Br28 in 1-dB steps.

"Data valid" pulses transfer the link-selected level values to B7 or B8 and output them. NAND gate B5.III combines the start pulses for the first and the second level and produces the "D/L" pulse for entering the values into the digital section.

Links Br3 and Br4 (F1, F2) determine the desired noise bandwidth.

5. Repair Instructions

5.1 Required Measuring Equipment and Accessories

The required measuring instruments and accessories are listed in section 3.1. For the test setups see Figs. 3-1 to 3-4. The digital section 282.9519 can be vertically plugged into the servicing sockets on board 282.9415 so that all the components are readily accessible.

5.2 Troubleshooting

First check the supply voltages of +5 V and ±12 to 13 V. Next some easy checkouts using an oscilloscope and a wideband voltmeter will permit the fault to be localized; all the filter ranges need to be checked.

5.2.1 Measurement Sequence

1. Measurement at the front-panel output:
It should be possible to switch the noise signal on and off with the aid of the NOISE ON button and to vary the output level in uniform 1-dB steps by means of "+" and "-" buttons. If the levels are incorrect, check the attenuator and its control signals from the digital section. The following measurement should be made if the level is wrong:

2. Measurement at test socket Bu11 (input of the attenuator):
Switch the noise signal on using the NOISE ON button. If the signal is absent, check the switching action of relays Rs30 and Rs31 and, if required, their control signals from the digital section. Next proceed as follows:

3. Measurement across R107/C72 (input of output stage):
If the signal is present, check the output stage. If the signal is absent (in all the filter ranges), perform the following measurement:

4. Measurement at St5.1/R104/R84/emitter of T14 (input of filter switchover circuit):
If the signal is absent, perform additional measurements on the noise source plus the amplifiers and the equalizer; if the signal is present, check the filter switchover and the control in the digital section.

If a signal of about 1 V_{pp} is not present across R104 (wideband signal path), the fault will probably be located in the noise source (base-emitter diode of T11) or in the subsequent amplifiers.

No signal across R104

First find the mean DC value at the emitter of T14. If this value differs from 0 V, the fault is located in the 0-V control loop comprising feedback amplifier B7.I, B5, B6 and the transistors T12 to T14.

Application of a 2-MHz signal to Bu10 enables easy function checking of this signal path. In this case, the maximum input voltage (V_{pp}) should not exceed 0.5 V. Measure the output voltage across R104; it should amount to about 0.6 to 0.7 V_{pp}. If the output voltage is correct, either transistor T10 or T11 is defective or the break-through current through T11 is wrongly adjusted. The optimum value of this current can be set with R39 and potentiometer R40.

Noise level depending heavily on temperature

The fault is due to the temperature-control circuit comprising B7.I. The heating current for T21 is measured via R72. In steady state (approx. 2 to 3 minutes after "power on"), about 350 mV should be present across R72, and the temperature measured on the aluminium block should be about 65°C.

5.2.2 Instructions for Troubleshooting

Noise signal at the output absent or too small:

Button RES is pressed, but none of the filter options is inserted. The attenuator or its control circuitry is defective. Therefore the noise voltage present across R140 (or via B11) is measured. If the signal is present, the fault should be localized in accordance with the circuit description and circuit diagrams 282.9115 S (switchable attenuator) and 282.9515 S (digital section).

If the signal is absent or faulty, the attenuator can be checked separately from the rest of the set with the NOISE ON mode selected and link Br10 removed. For this purpose, apply an RF signal of about 1 V (R_{in} = 75 Ω) to Bu11 and measure at the front-panel output with a 75-Ω termination.

Signal absent for all the four filter ranges

After bandwidth selection, measurements across the following resistors show how the signal is taken to the power output stage:

RES:	output resistor of filter option
20 Hz to 6 MHz:	R96
20 Hz to 110 kHz:	R105
20 Hz to 50 MHz:	R 85

If the signal is present at all these points, the fault is to be found in the output stage after the attenuator has been checked.

Differences between output level and level indication

If it is clear that the output stage delivers a sufficient noise level to the attenuator (about 15 V_{pp}, high-impedance measurement across R117/R120/R121), the fault must be in the control circuit.

If no fault is discovered when checking the control circuits for the relays of the attenuator (B12.I to VIII on the main board 282.9115 and B10.1/B14.4, B8 and B13 on the digital section board 282.9515), the bit pattern of EPROM B15 is no longer correct. Therefore the EPROM must be erased and programmed again.

5.3 Adjustments

5.3.1 Power Supply

See circuit diagram 282.9115 S sheet 1.

±12-V supply voltages

Use R13 to adjust for +12 V to 12.6 V at Br3.1 (coding link).
Check for -12 V to 12.6 V at Br4.1 (coding link). If required, adjust for voltage symmetry.

+5 V supply voltage

Use R20 to adjust for +5 V ±20 mV at Br5.1 (coding link).

Monitoring

Remove Si1, Si2 and Br2 one after another. In all three cases, the fault indicator should light up.

Servicing connector St3

St3.1: ground of the ±12-V power supply
St3.2: -18 V ±10%
St3.3: +18 V ±10%) supply voltage for chip B1
St3.4: -12 V
St3.5: emitter of T21) ΔV about 350 mV from temperature-control circuit

5.3.2 Analog Section

See circuit diagram 282.9115 sheets 2 and 3.

Temperature control of the noise source

Adjust R80 to obtain a temperature of about 65°C at the heating block. This corresponds to a voltage drop (ΔV) of about 350 mV across R72, measured between St3.4 and St3.5 (servicing connector).

Noise source

R39 and potentiometer R40 determine the optimum avalanche discharge current for the "noise diode" of T11. The noise signal is checked by means of an oscilloscope probe connected to the emitter of T14 (first make sure that the zero-volt control in this branch (control amplifier B7.1) is in the active range). Any tendencies to oscillations in the noise signal should be suppressed by adjusting R47. Potentiometers R51 and R55 should be set for maximum resistance in the signal path.

The signal at the emitter of T14 should be adjusted for optimum Gaussian amplitude distribution with the aid of R39 and R40. On the screen of the oscilloscope, this corresponds to a lens-shaped brightness distribution if an X deflection of > 1 s/division is chosen.

Further adjustments in this area should be made only after a complete performance check of the entire set.

Lowpass filters for white noise and output stage

Noise bandwidth 20 Hz to 50 MHz:

Set the wiper of potentiometer R107 to Rs8/9. Set the front-panel potentiometer R111 to its 0-dB mid-position. Then check using a probe at the output of the power output stage T25, T16 to T20.

The signal exhibits the Gaussian amplitude distribution and has a mean DC value of 0 V which is set via B10 from the 0-V control circuit.

Noise bandwidth 20 Hz to 6 MHz:
Use R91 to adjust the correction voltage across B10.II.7 to the same value as in the case of the bandwidth 20 Hz to 50 MHz.

Noise bandwidth 20 Hz to 110 kHz:
Use R102 to adjust the correction voltage across B10.II.7 to the same value as in the case of the bandwidth 10 Hz to 50 MHz.

Adjusting the frequency response

All the measurements are made in the range 20 Hz to 50 MHz; the attenuator is set to 0 dB; the reference value is 0 dB corresponding to 1 V_{rms}.

Adjustment at high frequencies (approx. 0.1 MHz to 50 MHz): Use a spectrum analyzer to measure at the SUF 2 output (frequency range 0.1 to > 400 MHz).

Adjust for an optimum frequency response up to about 10 MHz by changing R37. Use potentiometer R47 to adjust the flatness up to 50 MHz (if required, a slight improvement can be made with R40, but make sure that the Gaussian amplitude distribution is maintained).

Connect the coaxial cable to the input of a microwave power meter (e.g. NRS) and use R43 to adjust the output power of the SUF 2 to 13.33 mV $\pm$5% into 75 Ω at 20 Hz to 50 MHz. This power corresponds to 1 V_{rms} into 75 Ω.

Check the frequency response again with the spectrum analyzer and, if required, adjust the flatness using R37 and R47. Repeat the adjustments alternately until the frequency response and the output voltage conform to the specifications (ripple < 0.7 dB). For frequencies above 50 MHz, the amplitude should decrease by > 20 dB/octave (-60 dB at about 400 MHz).

Adjustment at low frequencies (20 Hz to about 0.1 MHz): Use a wave analyzer (e.g. FAT 2) to measure in the frequency range 20 Hz to > 60 kHz. Test bandwidth $\leq$ 30 Hz.

Normally the frequency response characteristic will have a "step" shape, the bend frequencies being approx. 200 Hz and 2 kHz. A further bend may be located in the region about 30 Hz.

R107 is used to flatten the frequency response for frequencies > 2 kHz, and R55 for the range between about 200 Hz and 2 kHz. R51 enables adjustment of the frequency response between 20 Hz and 200 Hz; however, the time constant of the 0-V control circuit (including B7.1) overlaps the range up to about 30 Hz. By varying R51 and R71 alternately, the frequency response in this range should therefore be adjusted such that the output at all frequencies of < 20 Hz does not rise above the level at higher frequencies.

Note: The analyzer zero must not invalidate the measurement range at low frequencies (< 30 Hz).

Checking in the range 20 Hz to 6 MHz:

Check the frequency response in the range 0.1 MHz to 6 MHz using a spectrum analyzer (e.g. SWOF 3). Ripple < 0.7 dB up to 6 MHz, decreasing until -32 dB is reached at frequencies above 8 MHz.

Check the output voltage using a wideband voltmeter (e.g. UPSF).
Rms-value measurement: 1 V_{rms} $\pm$5% into 75 Ω
Peak-value measurement: 7.1 V_{pp} into 75 Ω

If the rms value exceeds the tolerance limit, check the frequency response again in the range up to 10 MHz.
If the crest factor is < 7.1 (i.e. the peak-to-peak voltage is < 7.1 V), check on the oscilloscope whether the noise signal is being limited.
If it is being limited because the supply voltage is too low, use R13 to increase the voltage in the power supply, i.e. the upper tolerance limit may be used (+12.6 V). After the supply voltage has been varied, the temperature-control circuit of the noise source should, however, be readjusted with R80 (65°C corresponding to 350 mV at St3.4-5) and the frequency response and output voltage checked in the range from 20 Hz to 50 MHz.

Checking the attenuator

With a perfectly functioning digital section, check the noise voltage using a wideband voltmeter and switching the attenuator through its range. The measurement can also be performed with an external signal between Bu11 (noise off) and the output socket with the aid of a reference attenuator. Due to the binary stepping, the values measured at -1 dB, -2 dB, -4 dB, -8 dB, -16 dB, -32 dB and -64 dB show the errors possible for the individual attenuator networks.

Next check the additional attenuator networks associated with the audio reference (0 dB = 0.775 V) and the video reference (0 dB = 0.7 V).

5.3.3 Digital Section

The digital section does not have any adjusting elements; thus only the performance checks for manual control and parallel remote control in accordance with section 3.2.3 are required.

5.3.4 Options

Filter options

Triangular Noise Option SUF 2-Z2:

Use a spectrum analyzer to check the board in the SUF 2 in accordance with the test setup of Fig. 3-2. For the frequency response and its tolerance see Fig. 4-1.
Use C3 to adjust for a linear rise up to 6 MHz.
Use R6 to adjust the gain to 1 V_{rms} $\pm$0.5 dB into 75 Ω.
Check the stopband attenuation: > 20 dB at > 8 MHz.

Filter options SUF 2-Z3/-Z4/-Z5/-Z7:
Operate the PC board in the adapter in accordance with the test setup of Fig. 3-4.
For the frequency response and the corresponding tolerances see Figs. 4-2 to 4-5.
Adjust the gain using the appropriate control in accordance with the table included in Fig. 3-4.

Next insert the board into the SUF 2 and check the gain with an rms voltmeter (e.g. UPGR). Output voltage: 1 V_{rms} $\pm$0.5 dB into 75 Ω.

IEC-625-Bus Interface Option SUF 2-Z1

Check the board in the SUF 2. Connect a bus controller (e.g. Tektronix 4051) via an IEC-bus cable (e.g. PCK).
Check the IEC-625-Bus Interface in accordance with the test program (Fig. 2-7, left).

Use an oscilloscope for the following measurements: reset pulse at B14, pin 8 (see program sequence) and oscillator frequency (about 400 kHz).

CCIR Rec. 571 Program Option SUF 2-Z6

Check the board in the SUF 2. For the pin allocation of the rear-panel connector see Fig. 2-5 (three buttons, one link). Use an oscilloscope for all the measurements.

Check with the program option ON and OFF (buttons connected to Bu4.15 and .11) and ON/OFF (button connected to Bu4.17 with the link inserted between Bu4.4 and .16).

Check the clock pulses at St4 (spacing 0.5/1/2/4 s corresponding to a cycle duration of 4/8/16/32 s).

Check the filter selection with links Br2 and Br3; the filter selected is connected into circuit with the start command and acknowledged by the corresponding button.

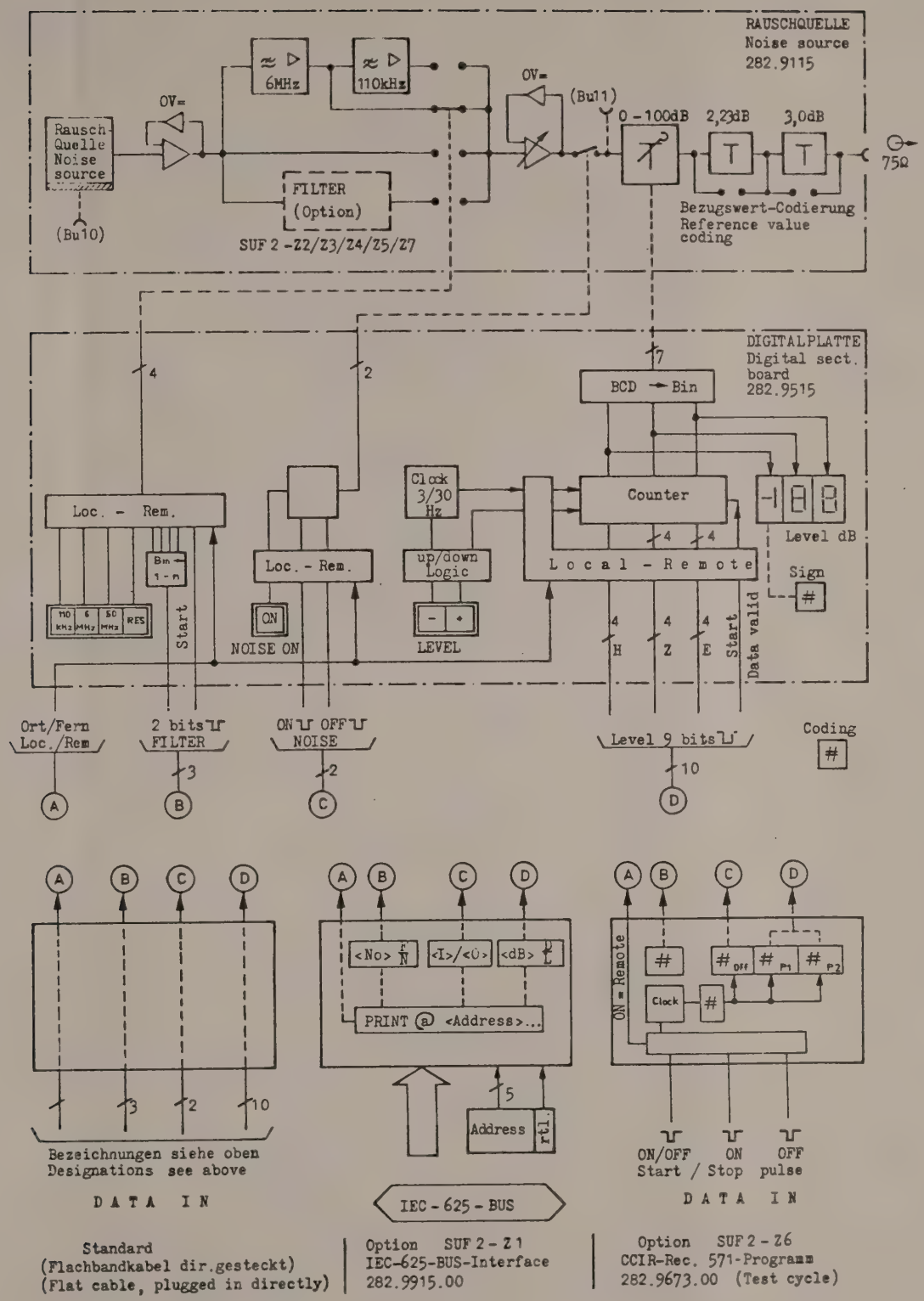
Check the link-selected level values on the front panel; the two levels are indicated alternately (factory setting: 0/-7 dB).

Check the level at the output in accordance with the oscillogram of Fig. 2-5.

Translations for Drawings and Diagrams

Analogteil	Analog section
2 auf 4 Decoder	2-to-4 line decoder
Bandbreiten-Steuerung	Bandwidth control
Bedienplatte	Panel-control board
Betrieb	Operation
Bezug	Reference
4 bit Speicher	4-bit memory
Decodierung BCD↓Binär	BCD-to-binary decoding
Decodierung Noise ein	Decoding "noise on"
Digitalplatte	Digital section board
Digitalteil	Digital section
Dreieckrauschen	Triangular noise
Eichleitung	Attenuator
EIN/AUS	On/off
Ein-Aus-Steuerung	On/off control
Endstufe	Output stage
Entzerrer	Equalizer
Fern	Remote
Hierzu	See
IEC-bus-Anschlußplatte	IEC-bus connecting board
IEC-625-Platte	IEC-625-bus board
Netz	AC supply
Netz ein - Reset	Power on - reset
Netzteil	Power supply
Oszillator	Oscillator
Pegel-Anzeige	Level indication
Rauschgenerator	Noise Generator

Rauschquelle	Noise source
Relaisansteuerung	Relay control
Rosa Rauschen	Pink noise
Schaltb. Dämpfungsgl.	Switchable attenuator
7-Segment	7-segment
Service	Servicing
Speicher + Zähler	Memory + counter
Stromlauf zu	Circuit diagram of
Taktoszillator	Clock generator
Telefoniekanalbelegung	CCITT Rec. G 227 Filter
Temp. Regelung	Temperature control
... Tiefpaß + Verstärker	... lowpass filter + amplifier
Treiber	Driver
UP-DOWN Logik	Up/down logic
Verstärker	Amplifier
Vor-Rückwärtszähler/BCD-Speicher	Up/down counter - BCD memory
Zeichn. Nr.	Drawing No.



Standard
(Flachbandkabel dir.gesteckt)
(Flat cable, plugged in directly)

Option SUF 2 - Z1
IEC-625-BUS-Interface
282.9915.00

Option SUF 2 - Z6
CCIR-Rec. 571-Programm
282.9673.00 (Test cycle)

Bild 1 BLOCKSCHALTPLAN
Fig. 1 Block diagram

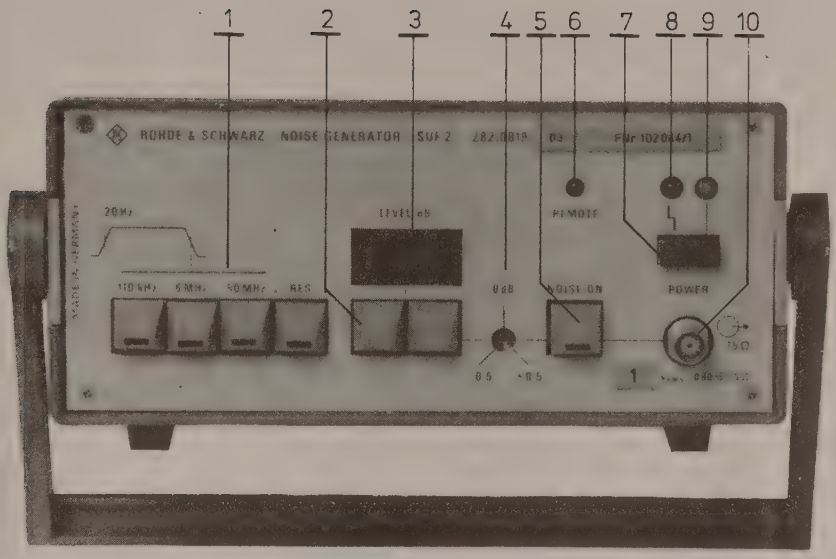


Bild 2-1 Frontansicht
Fig. 2-1 Front view

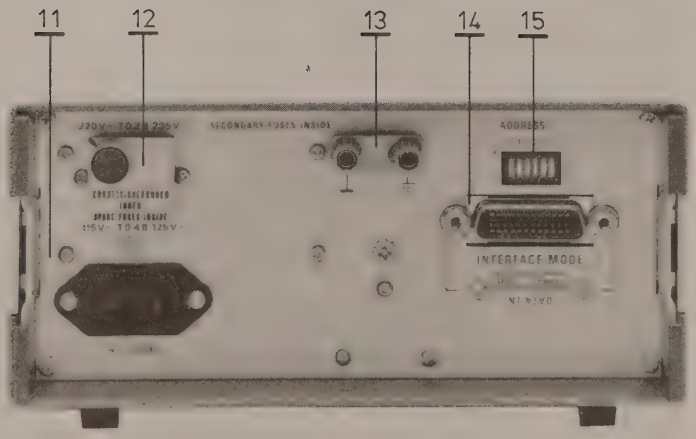
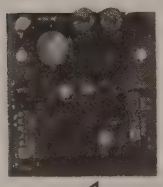


Bild 2-2 Rückansicht
Fig. 2-2 Rear view

Filter Options

SUF 2 - Z 2

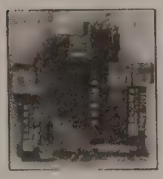


SUF 2 - Z 3

Rosa/Pink

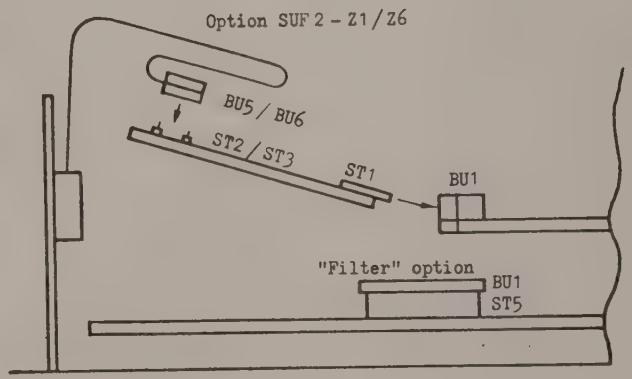
SUF 2 - Z 4

SUF 2 - Z 5



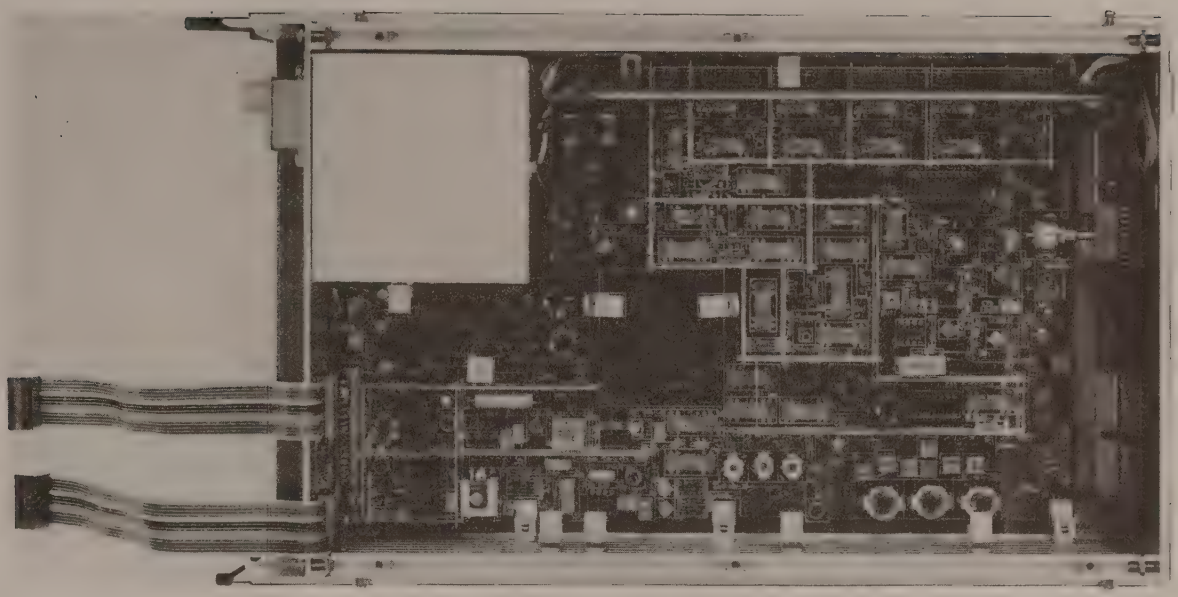
SUF 2 - Z 7

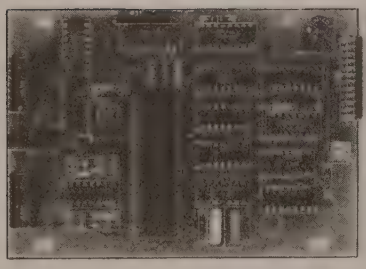
Einbau der Optionen / Filting Options
S U F 2 - Z1 / Z6

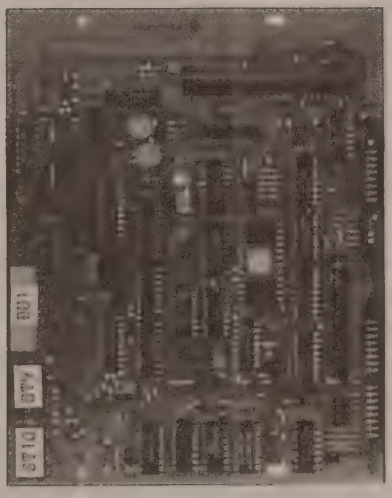


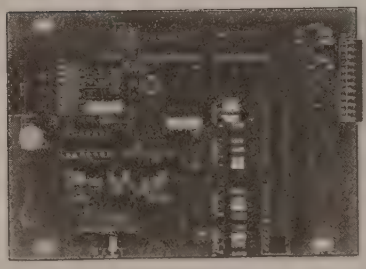
Verbindungen der Flachbandkabel
Flat cable connections

ohne/without options	BU5 - ST9	BU6 - ST10
mit/with option SUF2 - Z1	BU5 - ST3	BU6 - ST2
mit/with option SUF2 - Z5	BU5 - ST3	BU6 - ST10




ST1


RD1
8710


ST1

Adressen · Addresses

Geräte-Adresse * Device address *	Adreßzeichen im ASCII-7-Bit-Code Address characters in 7-bit ASCII	Code D_5	D_4
1	!	0	0
2	"	0	0
3	#	0	0
4	$	0	0
5	%	0	0
6	&	0	0
7	'	0	0
8	(	0	1
9	)	0	1
10**	*	0	1
11	+	0	1
12	,	0	1
13	-	0	1
14	.	0	1
15	/	0	1
16	0	1	0
17	1	1	0
18	2	1	0
19	3	1	0
20	4	1	0
21	5	1	0
22	6	1	0
23	7	1	0
24	8	1	1
25	9	1	1
26	:	1	1
27	;	1	1
28	<	1	1
29	=	1	1
30	>	1	1

* bei Ansteuerung mit TEK 4051 oder PCC
when using TEK 4051 or PCC

** Werkseinstellung
factory - adjusted

Die Adressen ∅ (Space = 00000) und 31 (? = 11111
Addresses ∅ (space = 00000) and 31 (? = 11111) a

Anschlußbelegung · Pin allocation

Pin No.	BU4 " IEC 625 BUS "			Pin No.
1	D1		D5	13
2	D2	Datenleitungen/Data lines	D6	14
3	D3		D7	15
4	D4			16
5			REN	17
6	DAV			18
7	NRFD			19
8	NDAC	Kontrolleitungen/Control lines	⊥	20
9	IFC			21
10				22
11	ATN			23
12	⊥			24

D A V (data valid)
Taktsignal vom Datengeber zum Markieren des Zeitraums, in dem die Daten gültig sind
Clock signal from data transmitter for marking the period in which the data are valid

N R F D (not ready for data)
Bereitsignal des SUF2 für Datenübernahme
Inverted signal indicating that the SUF2 is ready for data reception

N D A C (not data accepted)
Bestätigungssignal des SUF2 für empfangene Daten
Inverted signal acknowledging reception of data by SUF2

A T N (attention)
Signal für den SUF2 zum Unterscheiden von Daten und Geräteadressen
Signal to the SUF2 enabling it to identify specific data and instrument addresses

R E N (remote enable)
Signal vom Datengeber zum Umschalten der Meßgeräte auf Programmierbetrieb
Signal from data transmitter which switches the measuring instrument to programmed operation

I F C (interface clear)
Signal vom Datengeber zum Setzen der Geräteeinstellungen auf einen definierten Startpunkt
Signal from data transmitter causing the instrument to be set to a defined starting point

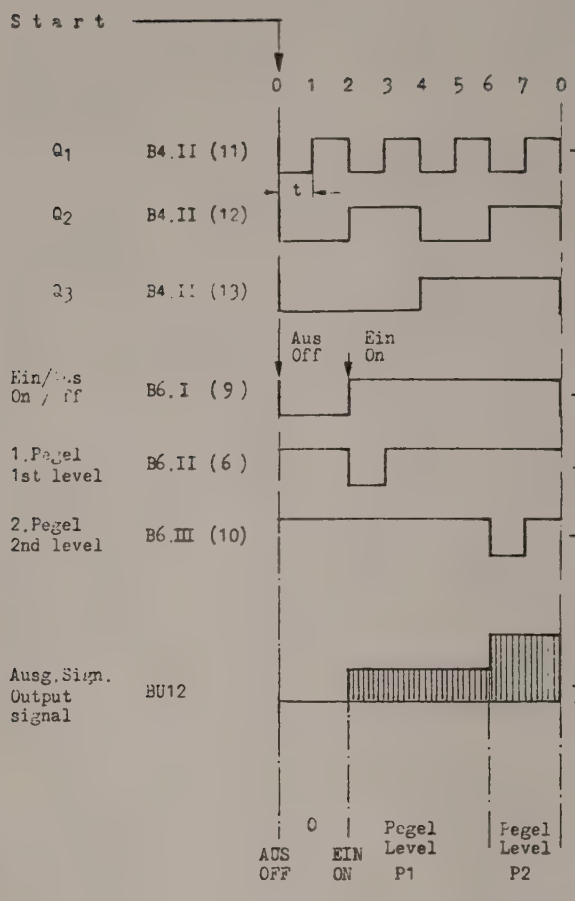
D_2	D_1
0	1
1	0
1	1
0	0
0	1
1	0
1	1
0	0
0	1
1	0
1	1
0	0
0	1
1	0
1	1
0	0
0	1
1	0
1	1
0	0
0	1
1	0
1	1
0	0
0	1
1	0

2 1 rtl

5 BUS

nd nicht erlaubt
ot permissible

Bild 2-4 ANSCHLUSSBELEGUNG UND ADRESSEN
Fig. 2-4 Pin allocation und addresses option
IEC - 625 - BUS - INTERFACE SUF 2 - Z1



Codierungen / Codi

Taktperiode "t"
Clock period

t (Sek)	0.5	1	2	4
BR1	1	2	4	8

Zeitablauf / Timing

Wert 4	Wert 2	Wert 1
BR4. BC	BR5. BC	BR6 frei
BR7. BC	BR8. AB	BR9. BC
BR10.AB	BR11.AB	BR12.BC

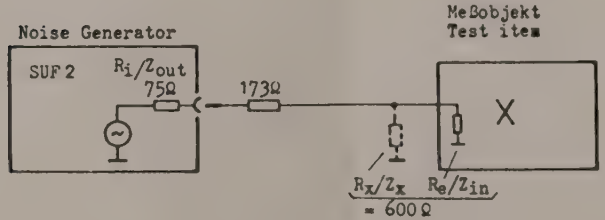
Brückenstellung = Beispiel für
Link position = example for Rec.5

Bandbreite / Bandwidth

Bandbreite Bandwidth	BR2	BR3
20Hz - 110kHz	AB	AB
20Hz - 6 MHz	BC	AB
20Hz - 50MHz	AB	BC
Reserve (Option)	BC	BC

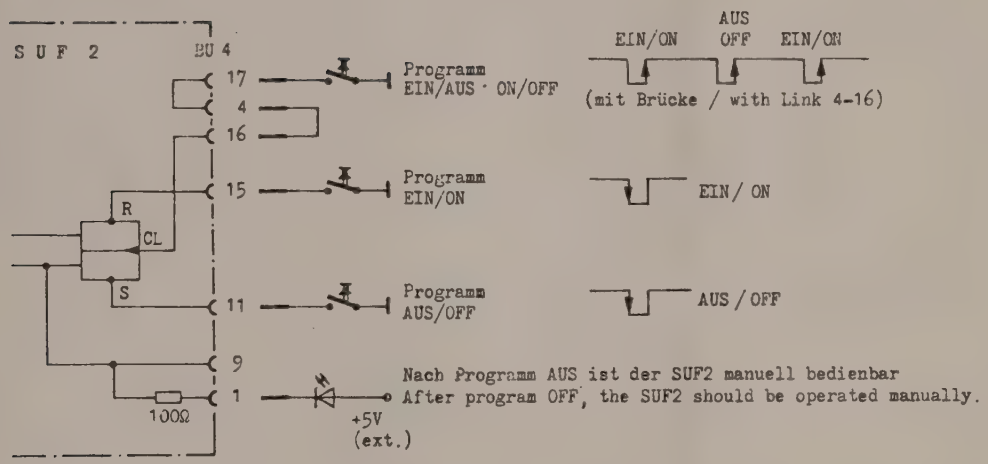
Stellenwert / Weighting										1. Pegel 1st level		2. Pegel 2nd level	
0	1	2	3	4	5	6	7	8	9	Zehner Tens	Einer Units	Zehner Tens	Einer Units
	x		x		x		x		x	BR17	BR13	BR25	BR21
		x	x			x	x			BR18	BR14	BR26	BR22
				x	x	x	x			BR19	BR15	BR27	BR23
								x	x	BR20	BR16	BR28	BR24

x = Brücke auf AB (≙"1" = +5V) alle anderen Brücken auf BC (≙"0" >0V)
x = Corresponding link set to AB (≙1 = +5V), all the other links to BC (≙



Anschlußbelegung / Pin allocation

Pin No.	B U 4	Pin No
1	+5 V (ext.)	13
3	EIN/ON	15
4		16
5	EIN/AUS ON / OFF	17
6		18
7		19
8		20
9	Programm (≙ L)	21
10		22
11	AUS / OFF	23
12		24

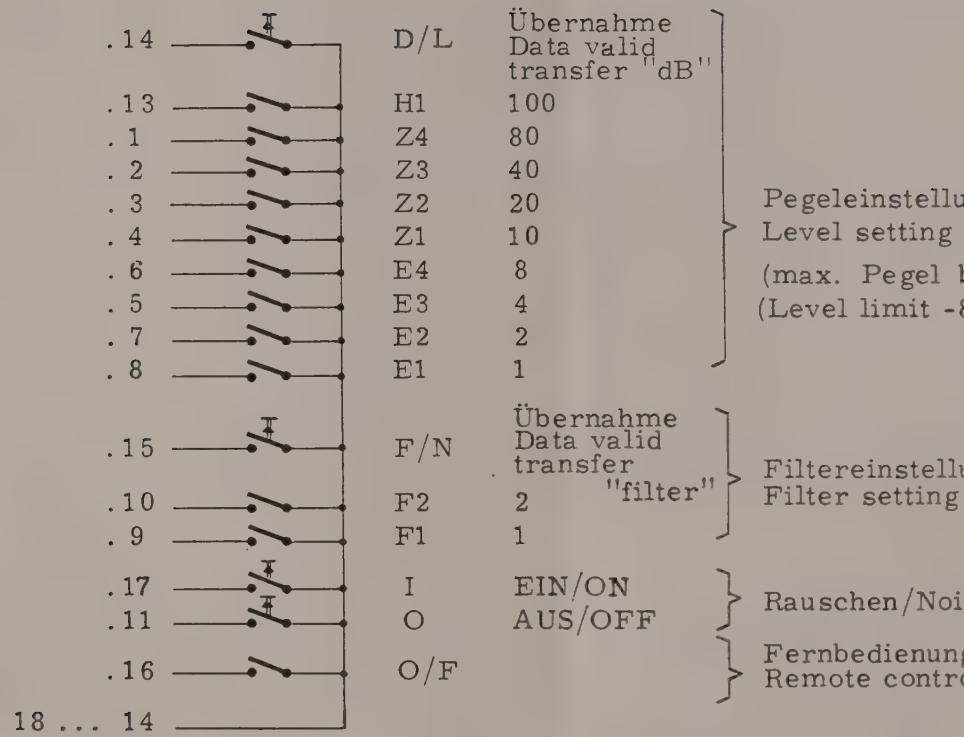


Werkseinstellung für Rec. 571 Factory setting for Rec. 571	
Taktzeit / Clock period	BR1 (2)
Zeitablauf / Timing	BR4-12 (Table)
Bandbreite / Bandwidth	BR2, BR3 (BC)
Pegel/Level -7/-0dB xx	BR13, 14, 15 (AB) Rest (BC)

xx = -7/-0dB entspricht -4/+3dBm bei 173Ω Längswiderstand und 600Ω Lastwiderstand bei Audiobezug (siehe Bild links

xx = -7/0dB correspond to -4/+3dBm with a 173-Ω series resistor and a 600Ω load for audio reference (see figure to the left, bottom)

Bild 2-5 ANSCHLUSSBELEGUNG UND CODIERUNG
Fig. 2-5 Pin allocation and codings
Option CCIR Rec. 571 - Programm SUF 2 - Z6


BU4
.14
D/L
Übernahme
Data valid
transfer "dB"
.13
H1
100
. 1
Z4
80
. 2
Z3
40
. 3
Z2
20
. 4
Z1
10
. 6
E4
8
. 5
E3
4
. 7
E2
2
. 8
E1
1
Pegeleinstellu
Level setting
(max. Pegel
(Level limit -
.15
F/N
Übernahme
Data valid
transfer
"filter"
.10
F2
2
. 9
F1
1
Filtereinstellu
Filter setting
.17
I
EIN/ON
.11
O
AUS/OFF
Rauschen/Noi
.16
O/F
Fernbedienun
Remote contr
18 ... 14

Pin No.	BU4 "DATA IN"		Pin No.
1	Z4	H1	13
2	Z3	D/L	14
3	Z4	F/N	15
4	Z1	O/F	16
5	E3	I	17
6	E4	Ground/Masse	18
7	E2	" "	19
8	E1	" "	20
9	F2	" "	21
10	F1	" "	22
11	0	" "	23
12	Shield	" "	24

			0	1	2	3	4	5	6	7	8	9
	Z4	E4	L	L	L	L	L	L	L	L	H	H
	Z3	E3	L	L	L	L	H	H	H	H	L	L
	Z2	E2	L	L	H	H	L	L	H	H	L	L
H1	Z1	E1	L	H	L	H	L	H	L	H	L	H

chten!)
IB or -100dB!)

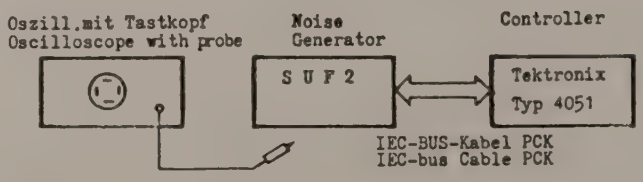
Bereich / Range	F2	F1
20Hz - 110kHz	L	L
20Hz - 6 MHz	L	H
20Hz - 50 MHz	H	L
Option Filter (Res)	H	H

H = Schalter offen/Switch off (= +5 V)
L = Schalter geschlossen/Switch on (= 0 V)

Bild 2-6 ANSCHLUSSBELEGUNG PARALLELFERNSTEUERUNG

Fig. 2-6 Pin allocation for parallel remote control

```
4 RUN 100
100 REM" TESTPROGRAMM FUER IEC-625-BUS-INTERFACE DES SUF2"
110 PAGE
120 PRINT "G_G_G_G_"
130 PRINT "TASTKOPF AN B14 PIN 8 ANCLIPSEN !"
140 PRINT "RUECKSETZIMPULSE FUER REGISTER B11 UND B12 MESSEN."
150 PRINT " DURCH DRUECKEN VON ' RETURN ' QUITTIEREN."
160 INPUT X$
170 P=10
180 GOSUB 1000
190 FOR N=1 TO 50
200 WBYTE @42,20:68
210 NEXT N
220 PRINT
230 PRINT "SUF2 SCHALTET NACH DRUECKEN VON 'RETURN' VON ORT AUF FERN."
240 INPUT X$
250 FOR N=1 TO 5
260 WBYTE @42,1:
270 P=1
280 GOSUB 1000
290 WBYTE @42,17:
300 P=1
310 GOSUB 1000
320 NEXT N
330 PRINT "SUF2 SCHALTET ZWISCHEN 'NOISE ON' UND 'NOISE OFF' UM."
340 PRINT "MIT 'RETURN' FORTSETZEN."
350 INPUT X$
360 FOR N=1 TO 5
370 PRINT @10:"O";
380 P=1
390 GOSUB 1000
400 PRINT @10:"I";
410 P=1
420 GOSUB 1000
430 NEXT N
440 PRINT "PEGEL ZAEHLT VON -100 DB NACH -0 DB."
450 PRINT "STARTET NACH 'RETURN'."
460 INPUT X$
470 P=4
480 GOSUB 1000
490 FOR N=100 TO 0 STEP -1
500 PRINT @10:N;"D";
510 P=1
520 GOSUB 1000
530 NEXT N
540 PRINT "DIE 4 BANDBREITEN WERDEN ANGEWAEHLT."
550 PRINT "MIT 'RETURN' AKTIVIEREN."
560 INPUT X$
570 P=2
580 GOSUB 1000
590 FOR N=0 TO 3
600 PRINT @10:N;"F";
610 P=2
620 GOSUB 1000
630 NEXT N
640 PRINT "TESTPROGRAMM ENDE. ALLES OK?"
650 PRINT "G_G_G_G_"
660 STOP
1000 REM "WARTEZEIT-AUSGLEICH TEK 4051 - 4052 "
1010 IF RND(0)>0.5 THEN 1070
1020 P1=P*3
1030 FOR Y=1 TO P1
1040 P2=4*ATN(1)
1050 NEXT Y
1060 GO TO 1080
1070 CALL "WAIT";P*0.5
1080 RETURN
```



```
E1:"3 DB - MESSUNG"          Überschrift auf Device #1 (z.B. Plotter) • Heading - device No.1 (e g. plotter)
E46,28:                      Spannungsmesser Rücksetzen (Device #14) • Reset voltmeter (device No.14)
E42,28:                      SUF2: IEC BUS-Interface Rücksetzen (Device #10)•SUF2: Reset IEC-bus interface (device No.10)
E18:"BFO";                   SUF2: Filter 20Hz ... 110kHz, Rauschen aus • SUF2: filter 20Hz to 110kHz, noise off
E14:"S6VRF?";                Spannungsmesser: Betriebsart "S6VRF" und triggern"?" • Voltmeter: mode "S6VRF" and trigger mode "?"
WAIT";4                      Wartezeit 4 Sekunden • Wait time 4 s
E14:U8                       Bezugsspannung UØ eingeben • Enter reference voltage VØ
E18:"I";                     SUF2: Rauschen ein • SUF2: noise on
8 TO 8 STEP -1               Variationsbereich des Pegels, Anfangswert -6Ø, Endwert ØdB • Level variation range; beginning -6Ø, end Ø dB
E18:T;"D";                   SUF2: Pegel T dB einstellen • SUF2: Set level T dB
WAIT";1.5                    Wartezeit 1,5 Sekunden • Wait time 1.5 s
E14:"?";                     Spannungsmesser Triggern "?" • Trigger voltmeter "?"
E14:U                        gemessene Spannung U aus Spannungsmesser übernehmen • Enter voltage V measured with voltmeter
QR(2)=U8)                    3-dB-Verhältnis bestimmen • Determine 3-dB ratio
1 THEN 270                   3-dB-Schwelle erreicht ? • 3-dB threshold reached ?
                             SUF2: Rauschpegel um 1dB erhöhen ( STEP-1" aus Zeile 190) • SUF2: increase noise level by 1dB (STEP 1" from line 190)
"GGG"                        Glocke ertönt 3x • Bell rings 3x
E1:"U8(V)","MESSSPANNUNG U(V)","RAUSCHPEGEL DB"
E1:U8,U,-1*T
```

K • Printout

```
SUNG
            MESSSPANNUNG U(V)  RAUSCHPEGEL DB
             8.6494                -27
```

für obiges Beispiel
for example given above

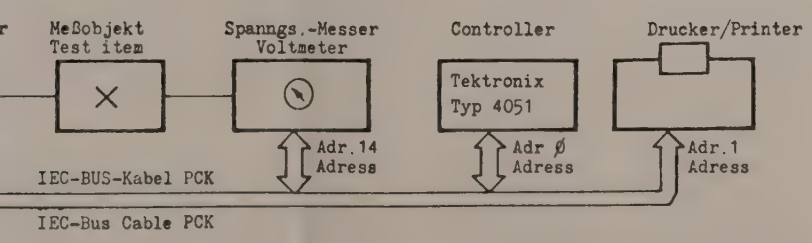
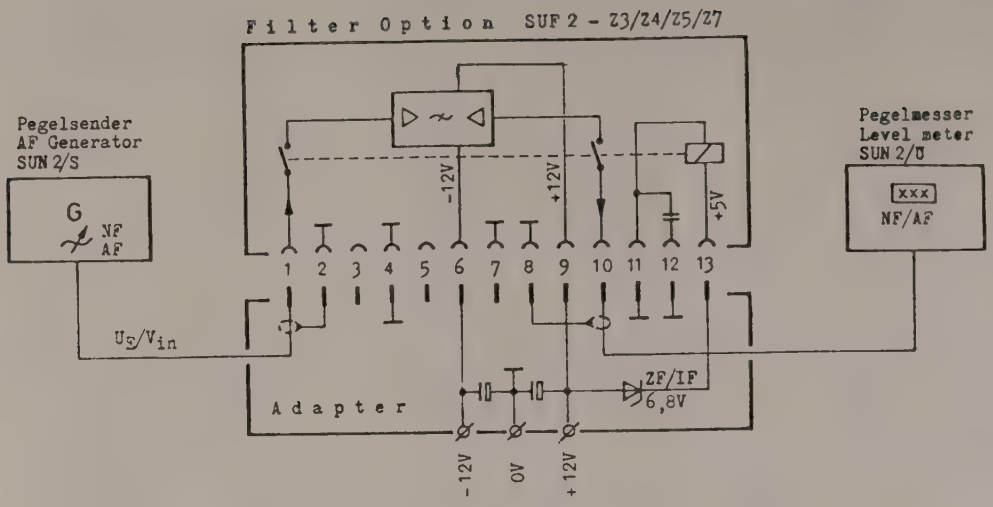


Bild 2-7 PROGRAMMBEISPIELE
Fig. 2-7 Programming examples

IEC 625 BUS



Filter Option	UE / Vin	Frequenzbereich Frequency range	Verstärkung Gain	Frequenzgang Freq. response
Dreiecksrauschen Triangular Noise	—	0 MHz - 6MHz	R 6	C3
Rosa Rauschen/Pink Noise	Ueff/Vrms ≦5mV	20 Hz - 16kHz	R 9	—
CCIR Rec. 559 - Filter	Ueff/Vrms ≦9mV	31,5 Hz -	R 9	—
CCIR Rec. 571 - Filter	Ueff/Vrms ≦18mV	31,5 Hz -	R12	—
CCITT Rec G.227 - Filter	Ueff/Vrms ≦4mV	31,5 Hz -	R12	—

Eingangsspannung, Frequenzbereich, Abgleichelemente
Input voltage, frequency range, calibration elements

Bild 3-4 Messung der Filter
Fig. 3-4 Filter measurement

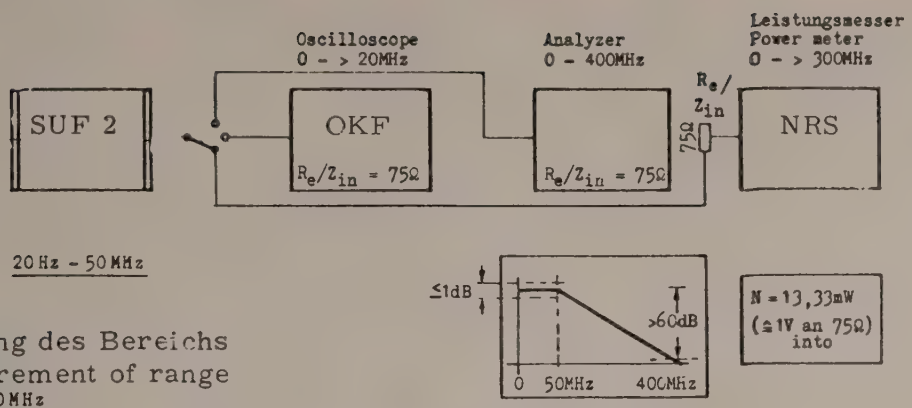


Bild 3-1 Messung des Bereichs
Fig. 3-1 Measurement of range
20 Hz - 50 MHz

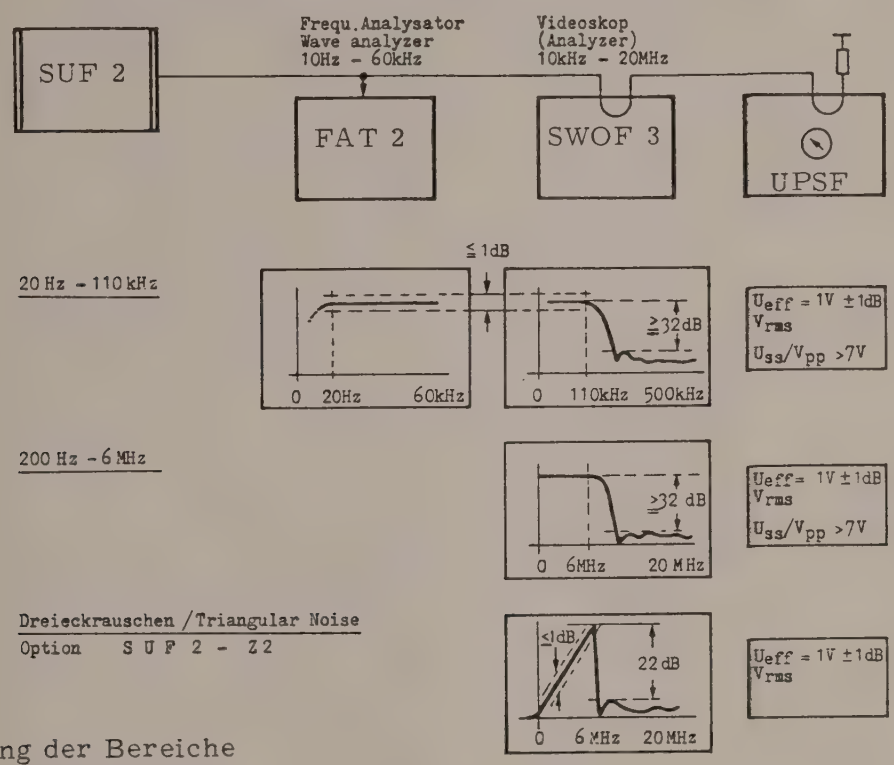


Bild 3-2 Messung der Bereiche
Fig. 3-2 Measurement of ranges
20 Hz - 110 kHz / 6 MHz / Option Dreieckrauschen
Triangular Noise Option

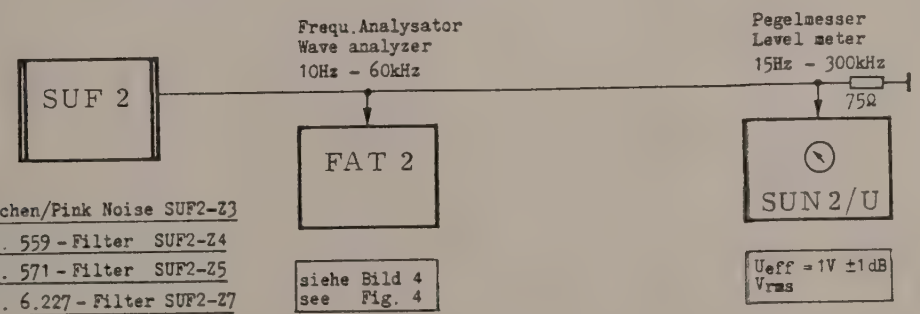
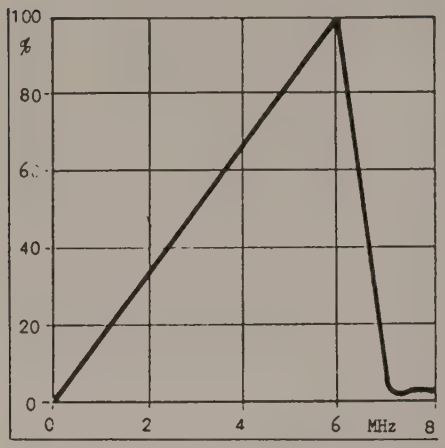


Bild 3-3 Messung der Filteroptionen SUF 2 - Z3/Z4/Z5/Z7
Fig. 3-3 Measurement of Filter Options

Bild 3 MESSAUFBAUTEN
Fig. 3 Test setups

Bild/Fig. 4-1

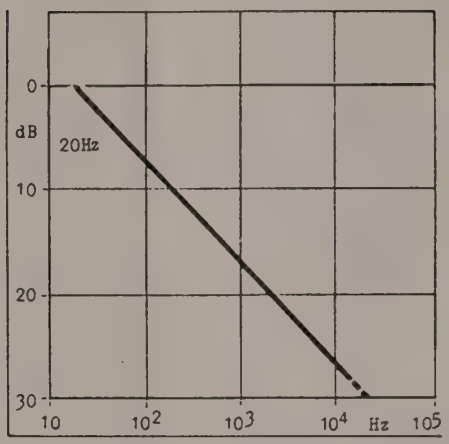
Dreiecksrauschen
Triangular Noise
Option SUF 2 - Z2



Frequenz Frequency	Amplitude (relativ) Level (relative)
1 MHz	(16,6 ±5) %
2 MHz	(33,2 ±5) %
3 MHz	(49,9 ±5) %
4 MHz	(66,4 ±5) %
5 MHz	(83,1 ±5) %
6 MHz	100 % (Ref.)
> 8 MHz	< 10 %

Bild/Fig. 4-2

Rosa Rauschen
Pink Noise
Option SUF 2 - Z3

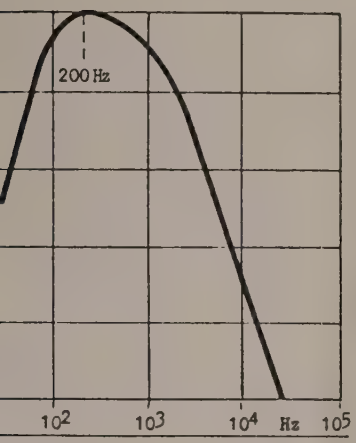


Frequenz Frequency	Einfügungsdämpfung Insertion loss
20 Hz	0 dB (Ref.)
40 Hz	-3 dB ±0,3 dB
80 Hz	-6 dB ±0,3 dB
160 Hz	-9 dB ±0,3 dB
320 Hz	-12 dB ±0,3 dB
640 Hz	-15 dB ±0,3 dB
1280 Hz	-18 dB ±0,3 dB
2560 Hz	-21 dB ±0,5 dB
5120 Hz	-24 dB ±0,5 dB
10240 Hz	-27 dB ±0,5 dB
(20 kHz)	(ca. -30 dB)

/Fig. 4-3

Rec. 559 - Filter

n SUF 2 - Z4

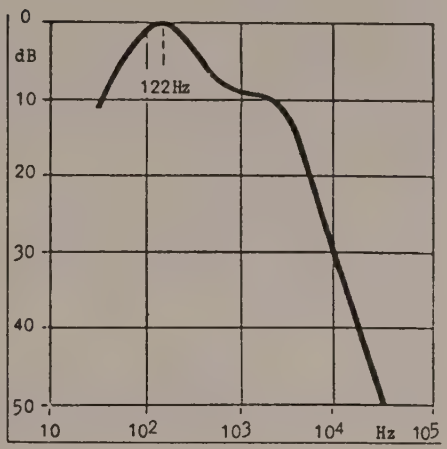


equenz equency	Einfügungsdämpfung Insertion loss
31,5 Hz	10,9 dB ±0,5 dB
50 Hz	16,0 dB ±0,5 dB
00 Hz	4,5 dB ±0,3 dB
00 Hz	0 dB (Ref.)
00 Hz	1,5 dB ±0,2 dB
1 kHz	4,7 dB ±0,3 dB
2 kHz	10,5 dB ±0,3 dB
4 kHz	19,0 dB ±0,5 dB
8 kHz	29,5 dB ±1,0 dB
15 kHz	40,0 dB ±1,0 dB
31,5kHz	52,8 dB ±1,0 dB

Bild/Fig. 4-4

CCIR Rec. 571 - Filter

Option SUF 2 - Z5

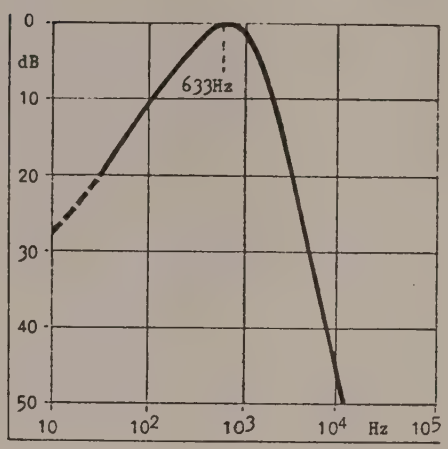


Frequenz Frequency	Einfügungsdämpfung Insertion loss
31,5 Hz	10,9 dB ±0,5 dB
63 Hz	3,4 dB ±0,3 dB
122 Hz	0 dB (Ref.)
200 Hz	1,5 dB ±0,2 dB
400 Hz	5,7 dB ±0,3 dB
800 Hz	8,7 dB ±0,3 dB
1 kHz	9,2 dB ±0,3 dB
2 kHz	10,6 dB ±0,5 dB
4 kHz	15,7 dB ±0,5 dB
8 kHz	26,6 dB ±0,5 dB
16 kHz	38,6 dB ±1,0 dB
31,5kHz	50,4 dB ±1,0 dB

Bild/Fig. 4-5

CCITT Rec. G. 227 - Filter

Option SUF 2 - Z7



Frequenz Frequency	Einfügungsdämpfung Insertion loss
31,5 Hz	20,9 dB ±0,5 dB
100 Hz	11,0 dB ±0,5 dB
200 Hz	5,5 dB ±0,3 dB
500 Hz	0,3 dB ±0,2 dB
633 Hz	0 dB (Ref.)
1 kHz	1,6 dB ±0,2 dB
2 kHz	10,2 dB ±0,5 dB
4 kHz	24,2 dB ±0,5 dB
8 kHz	40,2 dB ±1,0 dB
15 kHz	53,7 dB ±1,0 dB

Bild 4 FREQUENZGÄNGE DER FILTEROPTIONEN
Fig. 4 Frequency response of Filter Options

ROHDE & SCHWARZ
MÜNCHEN

Schaltteillisten
Stromläufe
Bestückungspläne

Parts lists
Circuit diagrams
Components plans

R 29500 Bl. 2

R&S-Schlüsselliste

Die R&S-Schaltteillisten nennen in der Spalte "Benennung/Beschreibung" die technischen Daten der Bauelemente in Kurzform. Die Art des Bauelements (z. B. Schicht-, Draht-Widerstand usw.) beschreiben die 2 Kennbuchstaben vor der "Benennung" (evtl. auch vor der "Sachnummer"), die nachfolgend erklärt werden. In Ersatzteil-Bestellungen an R&S ist stets die Angabe der vollständigen Sachnummer erforderlich

R&S key list

The R&S Parts Lists give the technical data of the components in short form in the column "Benennung/Beschreibung" (designation). The type of component (e.g. depos.-carbon resistor, wire-wound resistor etc.) is indicated by 2 identification letters before the designation, possibly also before the "Sachnummer" (order number), which are explained below. When ordering spare parts from R&S, the complete order number must always be specified.

Liste des symboles de référence R&S

La colonne «Désignation/description» des listes de pièces de R&S indique les caractéristiques des éléments sous forme abrégée. Le type d'élément (p. ex. résistance à couche, résistance bobinée etc. . .) est décrit par les deux lettres précédant la désignation (et éventuellement le numéro de référence), dont voici l'explication. Prière d'indiquer le numéro de référence («Sachnummer») complet dans toute commande de pièces de rechange.

Kenn-buchst	Art des Bauelementes	Identif.-letter	Type of component	Sym-bole	Type d'élément
A	**Aktive Bauelemente, Halbleiter**	**A**	**Active components, semiconductors**	**A**	**Composants actifs, semiconducteurs**
AD	Universaldiode, z.B. Gleichrichter, Sperrdiode	AD	General-purpose diode, e.g. rectifier, high-resistance diode	AD	Diode d'usage général, p.ex. redresseur, diode à haute resistance
AE	Spezialdiode, z.B. Tunnel-, Kapazitäts-, Zener-Diode	AE	Diode (special), e.g. tunnel diode, varactor, Zener diode	AE	Diode spéciale, p.ex. diode tunnel, varactor, diode Zener
AF	Fotoelement, z.B. Foto-Diode, -Transistor, -Widerstand, Leucht-diode	AF	Ligth-sensitive component, e.g. resistor, diode, transistor; LED	AF	Composant photoélectrique, p.ex. diode, transistor, resistance photoél., D.E.L.
AG	Leistungs-Gleichrichter, z.B. Thyristor, Triac, Selengleichrichter	AG	Power rectifier, e.g. thyristor, triac, selenium rectifier	AG	Redresseur de puissance, p.ex. thyristor, triac, redresseur au sélénium
AK	Kleinsignal-Transistor	AK	Low-power transistor	AK	Transistor faible puissance
AL	Leistungs-Transistor	AL	High-power transistor	AL	Transistor grande puissance
AM	Spezial-Transistor, z.B. FET, MOSFET	AM	Transistor (special), e.g. FET, MOS-FET	AM	Transistor spécial, p.ex. TEC, MOSTEC
AP	Peltier-, Hall-Element	AP	Peltier element, Hall element	AP	Element Peltier, élement Hall
AR	Röhre für Empfänger, Verstärker, Gleichrichter	AR	Valve for receiver, amplifier, rectifier	AR	Tube pour récepteur, amplificateur, redresseur
AS	Spezialröhre, z.B. Senderöhre, EW-Widerstand, Stabilisator	AS	Valve (special), e.g. for transmitter: baretter, ballast valve	AS	Tube (spécial), p.ex. pour émetteur, résistance fer-hydrogène, ballast
AT	Katodenstrahlröhre, z.B. Bildröhre, Ziffern-Anzeigeröhre	AT	Cathode ray tube, e.g. picture tube, digital indicator tube	AT	Tube à rayon cathodique, p.ex. tube à image, tube à affichage numérique
AW	Spannungs- oder temperaturabhängiger Widerstand	AW	Voltage- or temperature-dependent resistor	AW	Varistance ou thermistance
B	**Bausteine**	**B**	**PC boards, chips**	**B**	**Cartes imprimées, puces**
BC	Integr. Schaltkreis (Microcomp.)	BC	Integrated circuit (interface, A/D)	BC	Circuit intégré (microprocesseur)
BD	R&S-Dünnschichtschaltung	BD	R&S thinfilm circuit	BD	Circuit à couche mince R&S
BG	Gerätebaugruppe	BG	Subassembly	BG	Sous-ensemble
BJ	Integr. Schaltkreis (Interface, A/D-Wandler)	BJ	Integrated circuit (interface, A/D converter)	BJ	Circuit intégré (interface, convertisseur A/N)
BK	Kernspeicher, Magnetspeicher	BK	Core memory, magnetic memory	BK	Mémoire à tores, mémoire magnétique
BL	Log. Schaltkreis z.B. DTL, TTL, HTL, ECL, C-MOS	BL	Logic circuit, e.g. DTL, TTL,HTL, ECL, C-MOS	BL	Circuit logique, p.ex. DTL,TTL, HTL, ECL, C-MOS
BM	Hybridbaustein, z.B. Mischer, Tuner, Modulator	BM	Hybrid chip, e.g. mixer, tuner, modulator	BM	Puce hybride, p.ex. mélangeur, tuner, modulateur
BO	Analogschaltkreis, z.B. Operations-verstärker	BO	Analog circuit, e.g. operational amplifier	BO	Circuit analogique, p.ex. amplificateur opérationnel
BP	Optobaustein, z.B. Anzeigeeinheit, Koppler	BP	Optoelement, e.g. display, coupler	BP	Elément optique, p.ex afficheur coupleur
BS	Schalt- und Steuerbaustein, elektronischer Sensor	BS	Switching and control modul, electronic sensor	BS	Modul de commutation et de commande, sonde electronique
BV	Stromversorgung, Übersp.-Schutz	BV	Power pack, protective circuit	BV	Alimentation, protection surcharge

Kenn-buchst.	Art des Bauelementes	Identif.-letter	Type of component	Sym-bole	Type d'élément
C	**Kondensatoren**	**C**	**Capacitors**	**C**	**Condensateurs**
CB	Bypass-, Durchf.-Kondensator	CB	Bypass capacitor, feed-through capacitor	CB	Condensateur bypass, condensateur de traversée
CC	Keramischer Kondensator	CC	Ceramic capacitor	CC	Condensateur céramique
CD	Drehkondensator	CD	Variable capacitor	CD	Condensateur variable
CE	Elektrolytkondensator	CE	Electrolytic capacitor	CE	Condensateur électrolytique
CG	Glimmerkondensator	CG	Mica capacitor	CG	Condensateur au mica
CH	Sperrschichtkondensator	CH	Semiconductor capacitor	CH	Condensateur semiconducteur
CK	Kunstfolienkondensator	CK	Synthetic-foil capacitor	CK	Condensateur à feuille synthétique
CL	Ker. Hochsp.-Kondensator	CL	HV capacitor (ceramic)	CL	Condensateur HT céramique
CM	Metallpapier-Kondensator	CM	MP capacitor	CM	Condensateur à papier métallisé
CN	Kondensatornetzwerk	CN	Capacitor network	CN	Réseau capacitif
CP	Papierkondensator	CP	Paper capacitor	CP	Condensateur au papier
CS	Störschutzkondensator	CS	Interference-suppression capacitor	CS	Condensateur anti-parasite
CT	Trimmkondensator	CT	Trimmer capacitor	CT	Condensateur ajustable
CV	Vakuum-Kondensator	CV	Vacuum capacitor	CV	Condensateur à vide
D	**Drähte, Leitungen**	**D**	**Wires, lines**	**D**	**Fils, lignes**
DD	Schalt- und Wickeldraht	DD	Hook-up or winding wire	DD	Fil de câblage, fil de bobinage
DF	Flachleitung, Litze	DF	Flat multiple line, stranded wire	DF	Ligne plate, ligne torsadée
DG	Abgeschirmte Leitung	DG	Shielded line	DG	Ligne blindé
DH	Koaxialkabel	DH	Coaxial line	DH	Ligne coaxiale
DN	Antenne	DN	Antenna	DN	Antenne
DS	Anschlußkabel (mehradrig)	DS	Connecting cable, multicore	DS	Câble de connexion (multiconducteur)
E	**Elektrische Teile**	**E**	**Electric parts**	**E**	**Organes électriques**
EB	Blei-, NC-Akku, Batterie	EB	Lead or alkaline accumulator, battery	EB	Accumulateur Pb/NC, batterie
EF	Glühlampe, Leuchte	EF	Incandescent lamp, pilot lamp	EF	Lampe à incandescence, voyant
EG	Glimmlampe, Entladungslampe	EG	Glow lamp, discharge lamp	EG	Lampe à luminescence, lampe à décharge
EK	Kontakt-Streifen, -Feder	FK	Contact clip, contact spring	EK	Lame de contact, ressort de contact
EL	Lautspr., Kopfhörer, Mikrofon	EL	Loudspeaker, headphones, microphone	EL	Haut-parleur, casque, microphone
EM	Motor, Hubmagnet, Drehfeldsystem	EM	Motor, lifting magnet, synchro system	EM	Moteur, électro- aimant de levage, système synchro
EO	Oszillator, z.B. Quarzoszillator	EO	Oscillator, e.g. crystal oscillator	EO	Oscillateur, p.ex. oscillateur à quartz
EP	Tief-, Band-, Hochpaß, Bandsperre, Diskriminator	EP	Lowpass, bandpass, highpass filter, band-stop filter, discriminator	EP	Filtre passe-bas, passe-bande, passe-haut, suppression de bande discriminateur
EQ	Schwing-, Filter-Quarz	EQ	Oscillator or filter crystal	EQ	Quartz oscillateur, quartz de filtre
ER	Resonator, piezoelektr./ magnetostriktiv	ER	Resonator, piezoelectric/ magnetostrictive	ER	Résonateur piézo-électrique/ magneto-strictif
ES	Passive SHF-Bauteile	ES	Passive SHF-components	ES	Composant SHF passif
ET	Thermostat	ET	Thermostat	ET	Thermostat
EV	Lüfter, Gebläse	EV	Ventilator, blower	EV	Ventilateur, soufflerie
F	**Fassungen, Steckverbindungen**	**F**	**Sockets, connectors**	**F**	**Douilles, connecteurs**
FA	Dezifix/Prezifix A	FA	R&S coaxial connector Dezifix/Precifix A	FA	Dezifix, Prezifix A
FB	Dezifix B	FB	R&S coaxial connector Dezifix B	FB	Dezifix B
FC	Dezifix C	FC	R&S coaxial connector Dezifix C	FC	Dezifix C
FD	Dezifix D	FD	R&S coaxial connector Dezifix D	FD	Dezifix D
FE	Dezifix E/J	FE	R&S coaxial connector Dezifix E/J	FE	Dezifix E/J
FF	Dezifix F	FF	R&S coaxial connector Dezifix F	FF	Dezifix F

Kenn-buchst.	Art des Bauelementes	Identif.-letter	Type of component	Sym-bole	Type d'élément
FG	Koax-Umrüstsatz	FG	Coaxial screw-in assembly	FG	Ensemble vissable coaxial
FH	Koax-Übergang auf Fremdsystem	FH	Coaxial adapter	FH	Adaptateur coaxial
FJ	BNC-Systemteil	FJ	BNC srew-in assembly	FJ	Ensemble vissable BNC
FK	Koaxial-UHF-Systemteil	FK	Coaxial UHF screw-in assembly	FK	Ensemble vissable coaxial UHF
FM	Mehrfachstecker. Buchsenleiste	FM	Multipoint connector	FM	Connecteur multiple
FN	Netz-Steckverbindung	FN	AC-supply connector	FN	Connecteur secteur
FO	Runde Mehrfach-Steckverbindung	FO	Round multipoint connector	FO	Connecteur multipoles rond
FP	Druckschalt.-Steckverbindung	FP	Multipoint connector for PC boards	FP	Connecteur multipoles pour cartes imprimées
FR	Fassung für Lampe. Sicherung. usw.	FR	Socket for lamp. fuse. etc.	FR	Douille pour lampe. fusible etc. . .
FT	Schwachstrom-Steckverbindung	FT	LV plug and socket	FT	Connecteur pour faible courant
FU	Hochsp.-Steckverbindung	FU	HV plug and socket	FU	Connecteur pour haute tension
FV	Verbinder (z.B. AMP)	FV	Push-on connector	FV	Connecteur à enfichage
J	**Meßinstrumente**	**J**	**Indicators**	**J**	**Indicateurs**
JD	Drehspul-Anzeigeinstrument	JD	Moving-coil meter	JD	Galvanomètre à cadre mobile
JE	Dreheisen-Anzeigeinstrument	JE	Moving-iron meter	JE	Galvanomètre à fer mobile
JF	Frequenzmesser	JF	Frequency meter	JF	Fréquencemètre
JG	Drehspulinstrument mit Gleichrichter	JG	Moving-coil meter with rectifier	JG	Galvanomètre à cadre mobile avec redresseur
JH	Betriebstundenzähler	JH	Operating-hours counter	JH	Compteur d'heures de fonctionnement
JJ	Impulszähler	JJ	Pulse counter	JJ	Compteur d'impulsions
JK	Kleinst-Instrument. z.B. Abstimmanzeiger	JK	Mini-instrument. e.g. tuning indicator	JK	Petit indicateur. p.ex. indicateur d'accord
JM	Mechanisches Zählwerk	JM	Mechanical counter	JM	Compteur mécanique
JP	Projektions-Instrument (Leuchtziffer)	JP	Digital display	JP	Afficheur numérique
JQ	Quotientenmesser (Kreuzspul-instrument)	JQ	Ratiometer (cross coil)	JQ	Quotientmètre (à cadres croises)
JS	Spiegelgalvanometer	JS	Reflecting galvanometer	JS	Galvanomètre à mirroir
JU	Uhrwerk	JU	Clockwork	JU	Mouvement d'horlogerie
JW	Elektrodyn. Anzeigeinstrument	JW	Electrodynamic meter	JW	Instrument électrodynamique
L	**Induktivitäten. Magnetik**	**L**	**Inductors. magnetic components**	**L**	**Composants inductifs et magnétiques**
LC	Keramische Spule	LC	Ceramic coil	LC	Bobine céramique
LD	Netz-. HF-Drossel. Df-Filter	LD	Choke. lead-through filter	LD	Self de choc. filtre de traversée
LE	Einzelkreis. Bandfilter	LE	Single tuned circuit. bandpass filter	LE	Circuit accordé. filtre passe-bande
LP	Permanentmagnet	LP	Permanent magnet	LP	Aimant permanent
LT	Netztransformator	LT	Power transformer	LT	Transformateur secteur
LU	NF-Übertrager	LU	AF transformer	LU	Transformateur BF
LV	Variometer	LV	Variometer	LV	Variomètre
R	**Widerstände**	**R**	**Resistors**	**R**	**Résistances**
RD	Drahtwiderstand	RD	Wire-wound resistor	RD	Résistance bobinee
RF	Kohleschicht-Widerstand	RF	Carbon-film resistor	RF	Résistance à couche de carbone
RG	Metallglasur-Widerstand	RG	Metal-coated resistor	RG	Résistance à couche métallique
RJ	Metalloxyd-Widerstand	RJ	Metal-oxide resistor	RJ	Résistance à oxyde métallique
RL	Metallfilm-Widerstand	RL	Metal-film resistor	RL	Résistance à film metallique
RM	Widerstandsdraht	RM	Resistance wire	RM	Fil de résistance
RN	Widerstandsnetzwerk	RN	Resistor network	RN	Réseau de résistance
RR	Draht-Potentiometer	RR	Wire-wound potentiometer	RR	Potentiomètre bobine
RS	Schicht-Potentiometer	RS	Carbon-film potentiometer	RS	Potentiomètre à couche

Kenn-buchst.	Art des Bauelementes	Identif.-letter	Type of component	Sym-bole	Type d'élément
RT	Dämpfungsglied, Abschluß-widerstand	RT	Attenuator, termination	RT	Atténuateur, charge
RV	Drahtwiderstand mit Abgriff	RV	Wire-wound resistor, tapped	RV	Résistance bobinée à prise
RW	Wendelpotentiometer	RW	Helical potentiometer	RW	Potentiomètre hélicoidal
S	**Schalter, Relais, Sicherungen**	**S**	**Switches, relays, fuses**	**S**	**Commutateurs, relais, fusibles**
SB	Drucktastenschalter	SB	Pushbutton switch	SB	Commutateur à touche
SD	Drehschalter	SD	Rotary switch	SD	Commutateur rotatif
SF	Kontaktfedersatz	SF	Spring contact assembly	SF	Jeu de ressorts de contact
SH	HF-Koaxialschalter, -Relais, -Teiler	SH	Coaxial RF switch, RF relay, RF attenuator	SH	Commutateur RF coaxial, relais RF, atténuateur RF
SK	Kipp-, Wipp- und Schiebeschalter	SK	Toggle switch, slide switch	SK	Commutateur à bascule, à glissière
SL	Leistungsschalter Netz/HF	SL	AC supply switch, high-power RF switch	SL	Commutateur secteur, de puissance RF
SM	Mikroschalter	SM	Microswitch	SM	Microrupteur
SN	Elektromagnet. Relais	SN	Electromagnetic relay	SN	Relais électromagnétique
SP	Leistungsrelais, Luftschütz	SP	Power relay, air-type contactor	SP	Relais de puissance, contacteur à air
SR	Reedrelais	SR	Reed relay	SR	Relais reed
SS	Sicherung, Schutzschalter	SS	Fuse, automatic cut-out	SS	Fusible, coupe-circuit automatique
ST	Thermoschalter	ST	Thermal circuit breaker	ST	Disjoncteur thermique
SU	Überspannungs-Ableiter	SU	Arrester	SU	Eclateur
SW	Wechselrichter, Näherungsschalter	SW	Inverter (DC-AC), proximity switch	SW	Inverseur (DC-AC), commutateur de proximité
SZ	Zeitschalter	SZ	Time switch	SZ	Interrupteur horaire
V	**Verbindungselemente**	**V**	**Connecting elements**	**V**	**Eléments de raccordement**
VK	Klemme, Klemmleiste	VK	Clamp, terminal strip	VK	Pince, réglette à bornes
VL	Lötöse, Stützpunkt	VL	Soldering lug	VL	Cosse à souder
VS	Schraube, Mutter, Scheibe	VS	Screw, nut, washer	VS	Vis, écrou, disque

Farbcode für Widerstände und Kondensatoren / Colour code for resistors and capacitors / Code couleur pour résistances et condensateurs

Anmerkung:
Die Wertangabe der weitgehend miniaturisierten Bauelemente erfolgt überwiegend durch Farbkennzeichnungen, deren Bedeutung der nachfolgenden Tabelle entnommen werden kann.

Note:
The electrical values of the largely miniaturized components are mainly identified by a colour code, the meaning of which can be taken from the table below.

Remarque:
Les valeurs électriques des composants fort miniaturisés sont indiquées dans la plupart des cas par un code couleur dont voici l'explication.

HINWEIS:
Im Zuge des technischen Fortschrittes setzt R&S zunehmend Metallschichtwiderstände mit 1% Toleranz anstelle von Kohleschichtwiderständen mit 5% Toleranz ein. Metallschicht-widerstände können sich dabei an Stellen befinden, an denen gemäß Schaltteilliste Kohleschichtwiderstände vorgesehen sind. Etwaige geringfügige Differenzen der Nennwerte zwischen Stromlaufplan, Schaltteilliste und Gerät liegen im zulässigen Toleranzbereich.

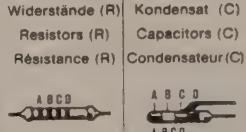
N. B.:
Following the state of the art R&S makes increasing use of metal-film resistors (1% tolerance) instead of carbon-film resistors (5% tolerance). Metal-film resistors may have been employed where carbon-film resistors are specified in the parts list. Any slight differences of nominal values between circuit diagram, parts list and equipment are within tolerance

N. B.:
Suivant le progrès technique R&S utilise de plus en plus des résistances à film métallique (tolérance 1%) au lieu des résistances à couche de carbone (tolérance 5%). Des résistances à film métallique peuvent se trouver en des points où des types à couche de carbone figurent dans la liste des composants. Les différences minimes des valeurs nominales existant éventuellement entre le schéma de circuit, la liste des composants et l'appareil sont dans la marge de tolérance.

Farbe/Colour/Couleur	A	B	C	D
Schwarz/Black/Noir	-	0		
Braun/Brown/Marron	1	1	0	± 1%
Rot/Red/Rouge	2	2	00	± 2%
Orange/Orangé	3	3	000	
Gelb/Yellow/Jaune	4	4	0000	
Grün/Green/Vert	5	5	00000	± 0,5%
Blau/Blue/Bleu	6	6	000000	
Violett/Violet	7	7	-	± 0,1%
Grau/Gray/Gris	8	8	-	
Weiß/White/Blanc	9	9	-	
Gold/Doré	-	-	-	± 5%
Silber/Silver/Argenté	-	-	-	± 10%
Ohne Farbe/No colour/ Pas de couleur	-	-	-	± 20%

Anordnungsbeispiele für Examples for Exemple pour

Widerstände (R) / Resistors (R) / Résistance (R) — Kondensat (C) / Capacitors (C) / Condensateur (C)



1) Toleranzring, hier nicht spezifiziert.
1) Tolerance ring, here not specified
1) Anneau de tolérance, ne pas spécifié ici.

Definition* / Définition*

Kennzeichen A / Marking A / Repérage A: (Bauteilfarbe/1. Farbring) = 1. Zahl: / (body colour or first coloured ring) = 1st digit: / (couleur du corps ou 1er anneau) = 1er chiffre:

Kennzeichen B / Marking B / Repérage B: (Bauteilende/2. Farbring) = 2. Zahl: / (body end or second coloured ring) = 2nd digit: / (bout du corps ou 2e anneau) = 2e chiffre:

Kennzeichen C / Marking C / Repérage C: (Punkt/3. Farbring) = 3. Zahl = Zahl der Nullen: / (dot or third coloured ring) = number of zeroes: / (point ou 3e anneau) = nombre de zéros:

Kennzeichen D / Marking D / Repérage D: (Punkt/4. Farbring) = Toleranz des Nennwerts in % (Fehlendes Kennzeichen für D bedeutet ±20%) / (dot or fourth coloured ring) = tolerance on nominal value in % (with no D marking: tolerance ± 20%) / (point ou 4e anneau) = tolérance en % de la valeur nominale (L'absence du repérage D signifie ± 20%)

Das Fehlen eines Kennzeichens bedeutet, daß die Farbe des Bauteilkörpers die Wertangabe darstellt.
The absence of a marking signifies that the body colour gives the corresponding information.
L'absence de tout repérage signifie que la couleur du corps du composant représente la valeur correspondante.

*Siehe auch DIN 41 429 und DIN 40 825
see also IEC publication 62-1952 and 82-1968
Voir aussi DIN 41 429 et DIN 40 825

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	09	0482	SUF2 VIDEO-RAUSCHGENERAT.	282.8819.01$_{SA}$	1

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
BU1	FJ BUCHSE F.LEISTE BNC	FJ 017.6788	282.8825
	SPINNER BN474342		
BU2	RAENDELKLEMME	282.8948	282.8919
BU3	RAENDELKLEMME	282.8948	282.8919
BU5	FP BUCHSENLEISTE 16P.DIL	FP 285.4050	282.8919
	BERG 65350-006		
BU6	FP BUCHSENLEISTE 16P.DIL	FP 285.4050	282.8919
	BERG 65350-006		
K1	KABEL K1	282.9344	282.8825
K2	KABEL K2	282.9980	
K3	KABEL K3	282.9973	
S8	SB SCHALT NETZ 2A O.KNOPF	SB 020.5495	282.8919
SI4	SS SCHMEL.TO,315BDIN41571	SS 020.7300	
	WICKMANN TO,315BDIN41571TROP.		
	FUER 220V		
	TO,4B SS 020.7323		
	FUER 115V		
ST1	FN GERAETEST.M.NETZFILTER	FN 252.5757	282.8919
	CORCOM 3EF1		
T7	AL 2N4919/BD236 SI PNP60V	AL 010.0361	282.8919
	VALVO BD236		
T8	AL BD233 SI NPN 40V 2A	AL 010.0784	282.8919
	VALVO BD233		
T9	AL BD233 SI NPN 40V 2A	AL 010.0784	282.8919
	VALVO BD233		
TR1	LT RINGKERNT.30VA11/2X18V	282.8931	282.8919
	POLYTRONIK R&S-ZCHNG.282.8931		
Y1	ED RAUSCHQUELLE	282.9115	
Y2	ED BEDIENPLATTE	282.9415	282.8825
Y3	ED DIGITALPLATTE	282.9515	
Y7	SUF2-Z7 TELEFONIEKANALBEL	282.8860	
	FUER DREICKRAUSCHEN		
	282.9715.00		
	FUER ROSA RAUSCHEN		
	282.9815.00		
	FUER CCIR-REC-550-FILTER		
	282.9615.00		
	FUER CCIR-REC-571-FILTER		
	282.9644.00		
	EMPFOHLENES ZUBEHOER		
Y10	SUF2-Z1 IEC-INTERFACE	282.9915	
	FUER CCIR-REC-571-PROGRAMM		
	282.9673.00		
	EMPFOHLENES ZUBEHOER		
Y11	ED IEC-625-PLATTE	218.3326	282.8919

- ENDE -

Diese Unterlage ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

ROHDE&SCHWARZ

ÄZ	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock No.	Blatt Page
17	0784	ED RAUSCHQUELLE	282.9115.00 SA	1

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
B1	BO TL082BCP 2XBIFET-OPAMP BO TL082BCP 2XBIFET-OPAMP TEXAS TL082BCP	BO 286.1031	
B2	BP 4N38 OPTOKOPPLER 1500V OPT.COUPLER 4N38 OPTRON 4N38	BP 219.3188	
B3	BO CA741G OP-AMPLIFIER IC OPERATION AMPLIFIER RCA CA 741E	BO 083.5563	
B4	BP 4N38 OPTOKOPPLER 1500V OPT.COUPLER 4N38 OPTRON 4N38	BP 219.3188	
B5	BO TDA1078 BREITB.OP.AMP. IC OP.AMPL.TDA1078 VALVO TDA1078	BO 332.2682	
B6	BO TDA1078 BREITB.OP.AMP. IC OP.AMPL.TDA1078 VALVO TDA1078	BO 332.2682	
B7	BO TL082BCP 2XBIFET-OPAMP BO TL082BCP 2XBIFET-OPAMP TEXAS TL082BCP	BO 286.1031	
B8	BO TDA1078 BREITB.OP.AMP. IC OP.AMPL.TDA1078 VALVO TDA1078	BO 332.2682	
B9	BO UA748C OP-AMP IC OPERATION AMPLIFIER RCA CA748E	BO 247.6542	
B10	BO TL082BCP 2XBIFET-OPAMP BO TL082BCP 2XBIFET-OPAMP TEXAS TL082BCP	BO 286.1031	
B11	BL SN7400N -0+75 NANDG. IC NAND GATE SN7400N TEXAS SN7400N	BL 009.3219	
B12	BL SN74LS240N 8XINV.DRIV. IC 8XINV.DRIVER SN74LS240 TEXAS SN74LS240N	BL 282.9196	
B13	BO TL082BCP 2XBIFET-OPAMP BO TL082BCP 2XBIFET-OPAMP TEXAS TL082BCP	BO 286.1031	
BR1	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR2	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR3	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR4	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR5	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
BR6	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR8	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR10	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BU11	FJ EINBAUSTECKER SYST.SMC CONNECTOR RADIALL SMC R.112 426	FJ 082.6895	
BU12	FJ EINBAUSTECKER SYST.SMC CONNECTOR RADIALL SMC R.112 426	FJ 082.6895	
C1	CE 470UF-10+50% 40V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK470/40	CE 087.0572	
C2	CE 470UF-10+50% 40V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK470/40	CE 087.0572	
C3	CE 470UF-10+50% 40V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK470/40	CE 087.0572	
C4	CE 470UF-10+50% 40V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK470/40	CE 087.0572	
C5	CE 1000UF10+50% 16V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK 1000/16	CE 087.0437	
C6	CE 1000UF10+50% 16V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK 1000/16	CE 087.0437	
C7	CC 1 NF+50-20%5HDK4000 CERAMIC CAPACITOR VALVO 2222 655 53102	006.0490	
C8	CC 1 NF+50-20%5HDK4000 CERAMIC CAPACITOR VALVO 2222 655 53102	006.0490	
C9	CE 47UF -10+100%40V 11X13 ELECTROLYTIC CAPACITOR SIEMENS B41316-B7476-Z	022.7589	
C10	CE 47UF -10+100%40V 11X13 ELECTROLYTIC CAPACITOR SIEMENS B41316-B7476-Z	022.7589	
C11	CE 47UF -10+100%16V 9X13 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK47/16	022.7543	
C12	CC 1 NF+50-20%5HDK4000 CERAMIC CAPACITOR VALVO 2222 655 53102	006.0490	
C17	CE 1,0UF+-20%35V 5X 4X 7 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR1-1/35	CE 022.8185	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
C20	CE 10 UF+-20%16V 7X 4X 8 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR2-10/15	CE 022.8085	
C21	CE 10 UF+-20%16V 7X 4X 8 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR2-10/15	CE 022.8085	
C23	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C24	CE 2,2UF+-20%20V 5X 4X 7 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR-2,2/20	CE 022.8104	
C25	CC 2,2PF+-0,25PF3X4NPO CAPACITOR VALVO 2222 678 09228	CC 087.6341	
C26	CC 220PF+-10%100V K1200VI CAPACITOR AEROVOX CKR05BX221KLEVELL	CC 060.1078	
C27	CC 18PF+-2%3X4N150 CAPACITOR VALVO 2222 678 34189	CC 087.6629	
C28	CT 5PF NO75 F.GEDR.SCH. DISC TRIMMER STETTNER 5STRIK0043/8PFN075	CT 066.8039	
C30	CK 470NF+-2,5%100V22X8X14 CAPACITOR WESTERMANN MKB5/0,47/2,5/100VIS	CK 069.0716	
C31	CK 47NF+-1%63V7,5QUX13 KP CAPACITOR SIEMENS B33531-A5473-F	CK 099.1904	
C32	CE 10 UF+-20%16V 7X 4X 8 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR2-10/15	CE 022.8085	
C33	CK 220NF+-20%100V QUADER PLASTIC-FOIL CAPACITOR ROEDERST MKT1822-422/0	CK 006.5056	
C34	CK 2,2NF+-20%160V RM7,5KC PLASTIC-FOIL CAPACITOR ROEDERST KC1848-222/1	CK 006.4614	
C35	CK 2,2NF+-20%160V RM7,5KC PLASTIC-FOIL CAPACITOR ROEDERST KC1848-222/1	CK 006.4614	
C36	CE 15 UF+-20%20V 7X 5X11 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR3-15/20	CE 022.8127	
C37	CE 15 UF+-20%20V 7X 5X11 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR3-15/20	CE 022.8127	
C38	CE 10 UF+-20%16V 7X 4X 8 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR2-10/15	CE 022.8085	
C39	CE 10 UF+-20%16V 7X 4X 8 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR2-10/15	CE 022.8085	
C40	CC 47PF+-2%5X6NPO CAPACITOR VALVO 2222 678 10479	CC 087.6506	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
C41	CC 18PF+-2%3X4NPO CAPACITOR VALVO 2222 678 10189	CC 087.6458	
C42	CC 12PF+-2%3X4NPO CAPACITOR VALVO 2222 678 10129	CC 087.6435	
C43	CC 68PF+-2%6X7NPO CAPACITOR VALVO 2222 678 10689	CC 087.6529	
C44	CC 18PF+-2%3X4NPO CAPACITOR VALVO 2222 678 10189	CC 087.6458	
C45	CC 56PF+-2%5X6NPO CAPACITOR VALVO 2222 678 10569	CC 087.6512	
C46	CC 22PF+-2%4X5NPO CAPACITOR VALVO 2222 678 10229	CC 087.6464	
C47	CC 33PF+-2%4X5NPO CAPACITOR VALVO 2222 678 10339	CC 087.6487	
C48	CC 33PF+-2%4X5NPO CAPACITOR VALVO 2222 678 10339	CC 087.6487	
C50	CC 39PF+-2%4X5NPO CAPACITOR VALVO 2222 678 10399	CC 087.6493	
C51	CC 56PF+-2%5X6NPO CAPACITOR VALVO 2222 678 10569	CC 087.6512	
C52	CC 39PF+-2%4X5NPO CAPACITOR VALVO 2222 678 10399	CC 087.6493	
C53	CC 3,3PF+-0,25PF3X4NPO CAPACITOR VALVO 2222 678 09338	CC 087.6364	
C54	CC 12PF+-2%3X4NPO CAPACITOR VALVO 2222 678 10129	CC 087.6435	
C55	CC 22PF+-2%4X5NPO CAPACITOR VALVO 2222 678 10229	CC 087.6464	
C56	CK 2,61NF+-1%63V6,3QUX11 PLASTIC-FOIL CAPACITOR SIEMENS B33531-A5262-F100	282.9180	
C57	CK 560PF+-1%63V6,3X11 KP PLASTIC-FOIL CAPACITOR SIEMENS B33531-A5561-F	CK 283.1660	
C60	CC 47PF+-2%5X6NPO CAPACITOR VALVO 2222 678 10479	CC 087.6506	
C61	CK 3,4NF+-1%63V6,3QUX11 PLASTIC-FOIL CAPACITOR SIEMENS B33531-A5342-F800	CK 282.9173	
C62	CK 3,3NF+-1%63V6,3QUX11KP CAPACITOR SIEMENS B33531-A5332-F	CK 340.9030	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
C63	CK 2,87NF+-1%63V6,3QUX11 SIEMENS B33531-A5282-F700	282.9150	
C64	CK 2,37NF+-1%63V6,3QUX11 CAPACITOR SIEMENS B33531-A5232-F700	282.9144	
C65	CK 1,62NF+-1%63V6,3QUX11 CAPACITOR SIEMENS B33531-A5162-F200	282.9138	
C66	CC 4 PF+-0,5 PF5P100 CERAMIC CAPACITOR DRALORIC P100/IB4/0,5SDPN	006.0077	
C67	CC 4 PF+-0,5 PF5P100 CERAMIC CAPACITOR DRALORIC P100/IB4/0,5SDPN	006.0077	
C70	CE 100UF-10+50% 25V 13X13 ELECTROLYTIC CAPACITOR ROEDERST ELKOEK100/25	CE 208.4007	
C71	CE 100UF-10+50% 25V 13X13 ELECTROLYTIC CAPACITOR ROEDERST ELKOEK100/25	CE 208.4007	
C72	CK 4,7NF+-1%63V6,3X11 KP PLASTIC-FOIL CAPACITOR SIEMENS B33531-A5472-F	CK 283.1701	
C73	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C74	CE 15 UF+-20%20V 7X 5X11 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR3-15/20	CE 022.8127	
C75	CE 15 UF+-20%20V 7X 5X11 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR3-15/20	CE 022.8127	
C77	CK 680NF+-20%100V QUADER CAPACITOR ROEDERST MKC1862-468/0	CK 087.4078	
C78	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C80	CE 1000UF10+50% 16V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK 1000/16	CE 087.0437	
C81	CC 100NF+-10%100V K1200VI CERAMIC CAPACITOR AEROVOX CKR06BX104KL	CC 060.1149	
C82	CE 1000UF10+50% 16V 15X30 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK 1000/16	CE 087.0437	
C83	CC 100NF+-10%100V K1200VI CERAMIC CAPACITOR AEROVOX CKR06BX104KL	CC 060.1149	
C85	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C86	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
C87	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C90	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C91	CC 1NF+-10%63V K2000 CERAMIC CAPACITOR VALVO 2222 63051 102	CC 022.0784	
C92	CC 1NF+-10%63V K2000 CERAMIC CAPACITOR VALVO 2222 63051 102	CC 022.0784	
C93	CC 1NF+-10%63V K2000 CERAMIC CAPACITOR VALVO 2222 63051 102	CC 022.0784	
C94	CC 1NF+-10%63V K2000 CERAMIC CAPACITOR VALVO 2222 63051 102	CC 022.0784	
C95	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C96	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C97	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C110	CC 39PF+-2%4X5N150 CAPACITOR VALVO 2222 678 34399	CC 087.6664	
C111	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C112	CC 5,6PF+-0,25PF3X4N150 CAPACITOR VALVO 2222 678 33568	CC 087.6564	
C113	CC 47PF+-2%4X5N150 CAPACITOR VALVO 2222 678 34479	CC 087.6670	
C114	CC 5,6PF+-0,25PF3X4N150 CAPACITOR VALVO 2222 678 33568	CC 087.6564	
C115	CC 5,6PF+-0,25PF3X4N150 CAPACITOR VALVO 2222 678 33568	CC 087.6564	
C116	CC 18PF+-2%3X4N150 CAPACITOR VALVO 2222 678 34189	CC 087.6629	
C117	CE 22 UF+-20%16V 7X 5X11 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKO ETR3-22/15	CE 022.8091	
C118	CC 100PF+-2%4X5N750 CAPACITOR VALVO 2222 678 58101	CC 087.6906	
C120	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	

Kennzeichen / Component No.	Benennung/Beschreibung / Designation	Sachnummer / Stock No.	enthalten in / contained in
C121	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C122	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C123	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C124	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C125	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C126	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C130	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C131	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C132	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C135	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C136	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C138	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C140	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C141	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C142	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C143	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C144	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C145	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C146	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
C147	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C150	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C151	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C152	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C153	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C154	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C155	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C156	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C157	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C160	CC 2,2NF+-10%5X6R2000 CAPACITOR VALVO 2222 63051 222	CC 087.7060	
C161	CC 100NF+-10%100V K1200VI CERAMIC CAPACITOR AEROVOX CKR06BX104KL	CC 060.1149	
C170	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C171	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
C172	CC 10NF-20+50%7X8R6000 CAPACITOR VALVO 2222 63051 64051103	CC 087.7525	
GL1	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL2	AG B60C800 BRGL RECTIFIER AEG-TELEF. B60C800SI	AG 013.2042	
GL3	AG KBF02 140V 2A5 BRGL RECTIFIER GEN-INSTR KBF02	006.9722	
GL4	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
GL5	AE BZX79/C18 0,5W Z-DI ZENER DIODE VALVO BZX79/C18	AE 012.2578	
GL6	AE BZX79/C18 0,5W Z-DI ZENER DIODE VALVO BZX79/C18	AE 012.2578	
GL7	AE 1N827 6,2V REF.DI REFERENCE DIODE CDI 1N827	AE 418.0029	
GL8	AE BZX79/C3V9 0,5W Z-DI ZENER DIODE VALVO BZX79/C3V9	AE 086.8234	
GL9	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL10	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL11	AE BZX79/C6V8 0,5W Z-DI ZENER DIODE VALVO BZX79/C6V8	AE 012.2478	
GL12	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL15	AE BZX79/C5V1 0,5W Z-DI ZENER DIODE VALVO BZX79/C5V1	AE 012.2449	
GL18	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL19	AE BZX79/C10 0,5W Z-DI ZENER DIODE VALVO BZX79/C10	AE 012.2510	
GL20	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL21	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL22	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL23	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL24	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL25	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL26	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL27	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
GL30	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL31	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL32	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL33	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL34	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL35	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL36	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL37	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
L3	SPULE COIL	282.9221	
L4	SPULE COIL	282.9238	
L5	SPULE COIL	282.9244	
L6	SPULE COIL	282.9250	
L7	SPULE COIL	282.9267	
L8	SPULE COIL	282.9273	
L10	ENTHALTEN IN 282.9121		
L11	ENTHALTEN IN 282.9121		
L12	ENTHALTEN IN 282.9121		
L13	ENTHALTEN IN 282.9121		
L14	ENTHALTEN IN 282.9121		
L15	ENTHALTEN IN 282.9121		
L16	ENTHALTEN IN 282.9121		
L17	ENTHALTEN IN 282.9121		
L18	ENTHALTEN IN 282.9121		

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R1	RL 0,35W 332 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/332OHM-F-D	RL 083.0255	
R2	RL 0,35W 39,2KOHM+-1%TK50 RESISTOR DRALORIC SMA/207/39,2K-F-C	RL 083.1745	
R3	RL 0,35W 332 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/332OHM-F-D	RL 083.0255	
R4	RL 0,35W 39,2KOHM+-1%TK50 RESISTOR DRALORIC SMA/207/39,2K-F-C	RL 083.1745	
R5	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R6	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R7	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R8	RL 0,1W 4,87KOHM+-1%TK50 RESISTOR DALE MF1/10 4,87K 1%TK50	RL 086.3049	
R9	RL 0,1W 11,8KOHM+-1%TK50 RESISTOR DALE MF1/10 11,8K 1%TK50	RL 086.3326	
R10	RL 0,1W 6,98KOHM+-1%TK50 RESISTOR DALE MF1/10 6,98K 1%TK50	RL 086.3155	
R11	RL 0,1W 4,99KOHM+-1%TK50 RESISTOR DALE MF1/10 4,99K 1%TK50	RL 086.3055	
R12	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R13	RS 0,5W1KOHM+-10%10X10X5 CERMET POTENTIOMETER T BOURNS 3386F-1-102	RS 087.7560	
R14	RL 0,1W 5,23KOHM+-1%TK50 RESISTOR DALE MF1/10 5,23K 1%TK50	RL 086.3061	
R15	RL 0,1W 5,23KOHM+-1%TK50 RESISTOR DALE MF1/10 5,23K 1%TK50	RL 086.3061	
R16	RL 0,35W 825 OHM+-1%TK50 RESISTOR DRALORIC SMA 0207/825OHM-F-C	RL 082.2502	
R17	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R18	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R19	RL 0,1W 2490HM+-1%TK50 RESISTOR DALE MF1/10 249 OHM1%TK50	RL 086.2071	
R20	RS 0,5W200 OHM+-10%10X10X10X CERMET POTENTIOMETER T BOURNS 3386F-1-201	RS 087.7554	
R21	RL 0,25W 1,21KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,21K-F-D	RL 083.0655	
R22	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R26	RL 0,35W 475 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/475OHM-F-D	RL 083.0390	
R27	RL 0,35W 47,5 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/47,5OHM-F-D	RL 082.9507	
R28	RL 0,35W 47,5 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/47,5OHM-F-D	RL 082.9507	
R29	RL 0,35W 1,82KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,82K-F-C	RL 082.2277	
R30	RL 0,25W 1,21KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,21K-F-D	RL 083.0655	
R31	RL 0,35W 100 OHM+-1%TK50 DEPOS.-CARBON RESISTOR DRALORIC SMA0207/100/HM-F-D	RL 082.6543	
R32	RL 0,35W 4,75KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/4,75K-F-D	RL 083.1097	
R35	RL 0,35W 2,74KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/2,74K-F-D	RL 083.0926	
R36	RL 0,35W 182 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/1820HM-F-D	RL 083.0010	
R37	RS 0,3W100 OHM+-10%CERMET CERMET POTENTIOMETER WESTON 548-00HS 1000HM+-10%	RS 087.8544	
R38	RL 0,1W 1,00KOHM+-1%TK50 RESISTOR DALE MF1/10 1,00K 1%TK50	RL 067.4537	
R39	RL 0,35W 1,50KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,50K-F-D TRIMMWERT	RL 083.0732	
R40	RS 0,5W 1KOHM+-20%KURVE1 DEPOS.-CARBON POTENTIOMET BOURNS 3329H-1-102	RS 069.8030	
R41	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/2210HM-F-D	RL 083.0084	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R42	RL 0,1W 1,82KOHM+-1%TK50 RESISTOR DALE MF1/10 1,82K 1%TK50 TRIMMWERT	RL 067.4595	
R43	RS 0,5W 1KOHM+-20%KURVE1 DEPOS.-CARBON POTENTIOMET BOURNS 3329H-1-102	RS 069.8030	
R44	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R45	RL 0,35W 475 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/475OHM-F-D	RL 083.0390	
R46	RL 0,1W 221OHM+-1%TK50 RESISTOR DALE MF1/10 221 OHM1%TK50	RL 067.4372	
R47	RS 0,5W 500 OHM+-20%KURV1 DEPOS.-CARBON POTENTIOMET BOURNS 3329H-1-501	RS 069.8023	
R48	RK HEISSL 20KOHM 10%0,80W THERMISTOR SIEMENS HEISSLK111020KOHM	RK 008.0139	
R49	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R50	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R51	RS 0,3W 5KOHM+-5% CERMET DEPOS.-CARBON POTENTIOMET VALVO 8024EJA502G2	282.9209	
R52	RL 0,35W 100 OHM+-1%TK50 DEPOS.-CARBON RESISTOR DRALORIC SMA0207/100/HM-F-D	RL 082.6543	
R53	RL 0,125W2,32KOHM+-1%TK50 RESISTOR DALE MF1/10 2,32K 1%TK50	RL 086.2813	
R54	RL 0,35W 1,50KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,50K-F-D	RL 083.0732	
R55	RS 0,3W 5KOHM+-5% CERMET DEPOS.-CARBON POTENTIOMET VALVO 8024EJA502G2	282.9209	
R56	RL 0,125W2,32KOHM+-1%TK50 RESISTOR DALE MF1/10 2,32K 1%TK50	RL 086.2813	
R57	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R58	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R59	RL 0,35W 4,99KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/4,99K-F-D	RL 083.1116	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R60	RL 0,35W 121 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/1210HM-F-D	RL 082.9859	
R62	RL 0,35W 1,50KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,50K-F-D	RL 083.0732	
R63	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R64	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R65	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R66	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R70	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R71	RL 0,35W 562 KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/562K-F-C TRIMMWERT	RL 083.2664	
R72	RF 0,5 W 12 OHM+-5% RESISTOR RESISTA SK4/120HM5%	RF 007.1148	
R73	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R74	RL 0,35W 2,21KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/2,21K-F-C	RL 082.2477	
R75	RL 0,35W 1MOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1M-F-D	RL 082.7862	
R76	RL 0,35W 3,92KOHM+-1%TK50 RESISTOR	RL 083.1039	
R77	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R80	RS 0,5W 200 OHM+-20%KURV1 DEPOS.-CARBON POTENTIOMET BOURNS 3329H-1-201	RS 069.8017	
R81	RL 0,35W 475 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/4750HM-F-D	RL 083.0390	
R82	RL 0,35W 121 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/1210HM-F-D	RL 082.9859	
R83	RL 0,35W 121 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/1210HM-F-D	RL 082.9859	
R84	RL 0,1W 4990HM+-1%TK50 RESISTOR DALE MF1/10 499 OHM1%TK50	RL 086.2336	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R85	RL 0,35W 182 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/182OHM-F-D	RL 083.0010	
R86	RL 0,1W 499OHM+-1%TK50 RESISTOR DALE MF1/10 499 OHM1%TK50	RL 086.2336	
R87	RL 0,35W 3,92KOHM+-1%TK50 RESISTOR	RL 083.1039	
R90	RL 0,1W 24,9KOHM+-1%TK50 RESISTOR DALE MF1/10 24,9K 1%TK50	RL 086.3555	
R91	RS 0,5W20KOHM+-20%KURVE1 DEPOS.-CARBON POTENTIOMET BOURNS 3329H-1-203	RS 069.8075	
R92	RL 0,35W 2,21KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/2,21K-F-C	RL 082.2477	
R93	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R94	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R95	RL 0,1W 549OHM+-1%TK50 RESISTOR DALE MF1/10 549 OHM1%TK50	RL 086.2365	
R96	RL 0,35W 182 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/182OHM-F-D	RL 083.0010	
R97	RL 0,1W 549OHM+-1%TK50 RESISTOR DALE MF1/10 549 OHM1%TK50	RL 086.2365	
R98	RS 0,3W 1KOHM+-10% CERMET CERMET POTENTIOMETER WESTON 548-00HS 1KOHM+-10%	RS 087.0050	
R101	RL 0,1W 24,3KOHM+-1%TK50 RESISTOR DALE MF1/10 24,3K 1%TK50	RL 067.4866	
R102	RS 0,5W20KOHM+-20%KURVE1 DEPOS.-CARBON POTENTIOMET BOURNS 3329H-1-203	RS 069.8075	
R103	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R104	RL 0,35W 7,68KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/7,68K-F-D	RL 083.1200	
R105	RL 0,35W 182 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/182OHM-F-D	RL 083.0010	
R106	RL 0,125W2,32KOHM+-1%TK50 RESISTOR DALE MF1/10 2,32K 1%TK50	RL 086.2813	
R107	RS 0,3W 5KOHM+-5% CERMET DEPOS.-CARBON POTENTIOMET VALVO 8024EJA502G2	282.9209	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R110	RF 0,5 W 820 OHM +-5% DEPOS.-CARBON RESISTOR RESISTA SK4/8200HM5%	RF 007.1360	
R111	RS 0,5W 47 OHM10%LIN L32 DEPOS.CARBON POTENTIOMET DRALORIC 61CDS 47 OHM10%LIN ACHSLAENGE A GEKUERZT AUF 27,6 MM	RS 087.7277	
R112	RL 0,1W 2260HM+-1%TK50 RESISTOR DALE MF1/10 226 OHM1%TK50	RL 086.2042	
R113	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R114	RF 0,25W 6,8 OHM +-5% RESISTOR DRALORIC LCA0207/+-5%6,8	RF 074.0079	
R115	RF 0,5 W 820 OHM +-5% DEPOS.-CARBON RESISTOR RESISTA SK4/8200HM5%	RF 007.1360	
R116	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/100HM-F-D	RL 082.8852	
R117	RL 0,1W 2,15KOHM+-1%TK50 RESISTOR DALE MF1/10 2,15K 1%TK50	RL 086.2794	
R120	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/100HM-F-D	RL 082.8852	
R121	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/100HM-F-D	RL 082.8852	
R123	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R124	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R125	RL 0,35W 4,75KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/4,75K-F-D	RL 083.1097	
R126	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R127	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R131	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R132	RL 0,35W 39,2 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/39,2OHM-F-D	RL 082.9420	
R133	RL 0,35W 121 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/121OHM-F-D	RL 082.9859	

095.0026-0481

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R134	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R135	RL 0,35W18,20 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/18,20HM-F-D	RL 082.9107	
R136	RL 0,35W18,20 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/18,20HM-F-D	RL 082.9107	
R137	RL 0,35W 182 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/1820HM-F-D	RL 083.0010	
R138	RL 0,35W 2,21KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/2,21K-F-C	RL 082.2477	
R140	RL 0,1W 75,00HM+-1%TK50 RESISTOR DALE MF1/10 75,00HM1%TK50	RL 067.4266	
R141	RL 0,1W 1000HM+-1%TK50 RESISTOR DALE MF1/10 100 0HM1%TK50	RL 067.4295	
R142	RL 0,1W 78,70HM+-1%TK50 RESISTOR DALE MF1/10 78,70HM1%TK50	RL 086.1717	
R143	RL 0,1W 1,47KOHM+-1%TK50 RESISTOR DALE MF1/10 1,47K 1%TK50	RL 086.2671	
R144	RL 0,1W 39,20HM+-1%TK50 RESISTOR DALE MF1/10 39,20HM1%TK50	RL 067.4195	
R145	RL 0,1W 1,47KOHM+-1%TK50 RESISTOR DALE MF1/10 1,47K 1%TK50	RL 086.2671	
R146	RL 0,1W 78,70HM+-1%TK50 RESISTOR DALE MF1/10 78,70HM1%TK50	RL 086.1717	
R147	RL 0,1W 78,70HM+-1%TK50 RESISTOR DALE MF1/10 78,70HM1%TK50	RL 086.1717	
R150	RL 0,1W 1,47KOHM+-1%TK50 RESISTOR DALE MF1/10 1,47K 1%TK50	RL 086.2671	
R151	RL 0,1W 78,70HM+-1%TK50 RESISTOR DALE MF1/10 78,70HM1%TK50	RL 086.1717	
R152	RL 0,1W 54,90HM+-1%TK50 RESISTOR DALE MF1/10 54,90HM1%TK50	RL 086.1600	
R153	RL 0,1W 24,30HM+-1%TK50 RESISTOR DALE MF1/10 24,30HM1%TK50	RL 067.4143	
R154	RL 0,1W 54,90HM+-1%TK50 RESISTOR DALE MF1/10 54,90HM1%TK50	RL 086.1600	
R155	RL 0,1W 32,40HM+-1%TK50 RESISTOR DALE MF1/10 32,40HM1%TK50	RL 086.1446	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R156	RL 0,1W 71,5OHM+-1%TK50 DALE MF1/10 71,5OHM1%TK50	RL 086.1681	
R157	RL 0,1W 32,4OHM+-1%TK50 RESISTOR DALE MF1/10 32,4OHM1%TK50	RL 086.1446	
R160	RL 0,1W 16,9OHM+-1%TK50 RESISTOR DALE MF1/10 16,9OHM1%TK50	RL 086.1230	
R161	RL 0,1W 158OHM+-1%TK50 RESISTOR DALE MF1/10 158 OHM1%TK50	RL 086.1930	
R162	RL 0,1W 16,9OHM+-1%TK50 RESISTOR DALE MF1/10 16,9OHM1%TK50	RL 086.1230	
R163	RL 0,1W 8,66OHM+-1%TK50 RESISTOR DALE MF1/10 8,66OHM1&TK50	RL 086.5370	
R164	RL 0,1W 324OHM+-1%TK50 RESISTOR DALE MF1/10 324 OHM1%TK50	RL 086.2165	
R165	RL 0,1W 8,66OHM+-1%TK50 RESISTOR DALE MF1/10 8,66OHM1&TK50	RL 086.5370	
R166	RL 0,1W 4,32OHM+-1%TK50 RESISTOR DALE MF1/10 4,32OHM1%TK50	RL 086.5087	
R167	RL 0,1W 649OHM+-1%TK50 RESISTOR DALE MF1/10 649 OHM1%TK50	RL 086.2413	
R170	RL 0,1W 4,32OHM+-1%TK50 RESISTOR DALE MF1/10 4,32OHM1%TK50	RL 086.5087	
R171	RL 0,1W 9,53OHM+-1%TK50 RESISTOR DALE MF1/10 9,53OHM1%TK50	RL 086.5412	
R172	RL 0,1W 287OHM+-1%TK50 RESISTOR DALE MF1/10 287 OHM1%TK50	RL 086.2120	
R173	RL 0,1W 9,53OHM+-1%TK50 RESISTOR DALE MF1/10 9,53OHM1%TK50	RL 086.5412	
R174	RL 0,1W 12,7OHM+-1%TK50 RESISTOR DALE MF1/10 12,7OHM1%TK50	RL 086.1152	
R175	RL 0,1W 215OHM+-1%TK50 RESISTOR DALE MF1/10 215 OHM1%TK50	RL 086.2036	
R176	RL 0,1W 12,7OHM+-1%TK50 RESISTOR DALE MF1/10 12,7OHM1%TK50	RL 086.1152	
R177	RL 0,1W 121OHM+-1%TK50 RESISTOR DALE MF1/10 121 OHM1%TK50	RL 067.4314	
RS3	SR 5V360OHM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
RS4	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS5	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS6	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS7	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS8	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS9	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS11	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS12	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS13	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS14	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS15	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS16	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS17	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS18	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS19	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS20	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS21	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS22	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS23	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
RS24	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS25	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS26	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS27	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS28	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS29	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS30	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS31	SR 5V3600HM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
SI1	SS SCHMELZ.T0,63 DIN41662 FUSE WICKMANN T0,63 DIN 41662 TROP	SS 020.7381	
SI2	SS SCHMELZ.T0,63 DIN41662 FUSE WICKMANN T0,63 DIN 41662 TROP	SS 020.7381	
SI3	SS SCHMELZS.T0,8 DIN41662 FUSE WICKMANN T0,8 DIN 41662 TROP	SS 020.7417	
ST1	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 5-POLIG	FP 242.3600	
ST2	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 6-POLIG	FP 242.3600	
ST3	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 5-POLIG	FP 242.3600	
ST4	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 4-POLIG	FP 242.3600	
ST5	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 13-POLIG	FP 242.3600	
ST6	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36	FP 288.1945	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
	9-POLIG		
ST7	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36	FP 288.1945	
	13-POLIG		
T1	AK BCY59IX NPN 45V 200MA TRANSISTOR SIEMENS BCY59IX	AK 010.5163	
T2	AK BCY79IX PNP 45V 200MA TRANSISTOR SIEMENS BCY79IX	AK 010.3777	
T3	AK BCY59IX NPN 45V 200MA TRANSISTOR SIEMENS BCY59IX	AK 010.5163	
T4	AK BCY59IX NPN 45V 200MA TRANSISTOR SIEMENS BCY59IX	AK 010.5163	
T5	AM BF245B NKAN 30V FET FET VALVO BF245B	AM 010.8627	
T6	AM BF245B NKAN 30V FET FET VALVO BF245B	AM 010.8627	
T10	AK BFY90 NPN 15V 25MA TRANSISTOR VALVO BFY90	AK 010.4550	
T11	RAUSCHTRANSISTOR SEL.	218.3361	
T12	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T13	AK BFX48 PNP 30V 100MA TRANSISTOR SGS BFX48	AK 010.3202	
T14	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T15	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T16	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T17	AK BSX29 PNP 12V 200MA TRANSISTOR SGS BSX29	AK 010.3031	
T18	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T19	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T20	AK BFX48 PNP 30V 100MA TRANSISTOR SGS BFX48	AK 010.3202	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
T21	AL BD233 NPN 45V 2A0 TRANSISTOR VALVO BD233	AL 010.0784	
T22	AK BFX48 PNP 30V 100MA TRANSISTOR SGS BFX48	AK 010.3202	
T23	AK BCY59IX NPN 45V 200MA TRANSISTOR SIEMENS BCY59IX	AK 010.5163	
T24	AK BCY79IX PNP 45V 200MA TRANSISTOR SIEMENS BCY79IX	AK 010.3777	
T25	AK 2N3947 NPN 40V 200MA TRANSISTOR MOTOROLA 2N3947/R&S-LV	AK 280.9860	

ROHDE&SCHWARZ	ÄZ	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock No.	Blatt Page
	05	0683	ED BEDIENPLATTE CONTROL BOARD	282.9415 SA	1

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
A	ZUGEHOERIGER STROMLAUF 282.9515 S		
B1	BP 5082-7616 +-ANZEIGE RT IC +- INDICATING 5082-761 HEWLETT HDSP4346	BP 302.7934	
B2	BP 5082-7610 7SEGM.ANZ.RT IC SEGMENT INDICATION HEWLETT HDSP4340	BP 293.6241	
B3	BP 5082-7610 7SEGM.ANZ.RT IC SEGMENT INDICATION HEWLETT HDSP4340	BP 293.6241	
BU1	FP BUCHSENL.18POL.2REIHIG	FP 280.9747	
BU2	FP IND.BUCHSENLEISTE 16P. BERG 76325-208	FP 230.2249	
BU3	FP BUCHSENL.18POL.2REIHIG	FP 280.9747	
BU4	FP IND.BUCHSENLEISTE 16P. BERG 76325-208	FP 230.2249	
BU5	FP BUCHSENL.18POL.2REIHIG	FP 280.9747	
BU6	FP IND.BUCHSENLEISTE 16P. BERG 76325-208	FP 230.2249	
BU7	FP BUCHSENLEISTE 9POL BERG 76323-209	FP 510.1491	
BU8	FP BUCHSENLEISTE 13POL. FEMALE MULTIP. CONNECTOR BERG 76323-213	FP 510.1391	
GL1	AF HLMP3401 LED GE RD3 LED HEWLETT-P. HLMP-3401	AF 092.8703	
GL2	AF HLMP3401 LED GE RD3 LED HEWLETT-P. HLMP-3401	AF 092.8703	
GL3	AF HLMP3502 LED GN RD5 LED HEWLETT-P. HLMP 3502	AF 235.4862	
R1	RL 0,25W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/2210HM-F-D	RL 083.0084	
BIS/TO R4			
S1	SB SCHALTELEMENT M.LED RT SWITCH SEL 099.0689 R&S-K-BLATT	SB 099.0689	
BIS/TO S4			
S5	SB SCHALTELEMENT UNBEL. SWITCH SEL 099.0672 R&S-K-BLATT	SB 099.0672	
S6	SB SCHALTELEMENT UNBEL. SWITCH SEL 099.0672 R&S-K-BLATT	SB 099.0672	
S7	SB SCHALTELEMENT M.LED RT SWITCH	SB 099.0689	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
	SEL 099.0689 R&S-K-BLATT		
ST1	FP STECKERL.IND.36P.R2,54 MULTIPOINT CONNECTOR BERG 75168-117-36 4-POLIG	FP 288.1945	
			- ENDE -

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
B1	BL SN7417N HEX.BUFF.DRIV. IC HEX BUFFER DRIVER SN74 TEXAS SN7417N	BL 244.8538	
B2	BL MC14556BCP 2X1:4DEMUX. DECODER/DEMULTIPLEXER SSS SCL4556BE	BL 282.3400	
B3	BL SN74LS298N 4/2INP.MUX IC 4/2 INP.MUX SN 74LS298 TEXAS SN74LS298N	BL 303.1452	
B4	BL SN74LS00N 4/2INP.NAND IC NAND GATE SN74LS00N TEXAS SN74LS00N	BL 266.4641	
B5	BL CD4012BE 2X4IN.NANDG NAND GATE RCA CD4012BE	BL 086.7015	
B6	BL SN54LS247J 7SEGM.DECOD IC SEGMENT DECODER SN54LS TEXAS SN54LS247J	BL 294.9673	
B7	BL SN54LS247J 7SEGM.DECOD IC SEGMENT DECODER SN54LS TEXAS SN54LS247J	BL 294.9673	
B8	BL SN74LS05N 6/INVERT. OC IC INVERTER SN74LS05N TEXAS SN74LS05N	BL 266.7911	
B9	BL SN74LS74AN 2/D-FLIPFL. IC FLIP-FLOP SN74LS74N TEXAS SN74LS74N	BL 266.7934	
B10	BL SN74LS38N 4/2INP.NANDO LOW POWER TEXAS SN74LS38N	BL 216.2000	
B11	BL CD4098BF 2X MONOFLOP MONO FLOP RCA CD4098BF	BL 517.7550	
B12	BL SN74LS00N 4/2INP.NAND IC NAND GATE SN74LS00N TEXAS SN74LS00N	BL 266.4641	
B13	BL SN74LS00N 4/2INP.NAND IC NAND GATE SN74LS00N TEXAS SN74LS00N	BL 266.4641	
B14	BL SN74LS05N 6/INVERT. OC IC INVERTER SN74LS05N TEXAS SN74LS05N	BL 266.7911	
B15	BC2716 PROGRAMMIERT	282.9067	
B16	BL CD4029BE U/D-COUNTER COUNTER RCA CD4029BE	BL 086.7167	
B17	BL CD4029BE U/D-COUNTER COUNTER RCA CD4029BE	BL 086.7167	
B18	BL CD4029BE U/D-COUNTER COUNTER RCA CD4029BE	BL 086.7167	
B19	BL MC14503BAL 6XBUFF. 3S BUFFER TRISTATE MOTOROLA MC14503BAL	BL 418.0212	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
B20	BL MC14503BAL 6XBUFF. 3S BUFFER TRISTATE MOTOROLA MC14503BAL	BL 418.0212	
B21	BL CD4011BE 4X2IN.NANDG NAND GATE RCA CD4011BE	BL 252.7337	
B22	BL MM74C914N 6XSCHM.TRIGG IC 6XSCHMITT TRIGGER NSC MM74C914N	BL 282.3423	
B23	BL CD4030BE 4X2IN.EXORG EXOR GATE RCA CD4030BE	BL 086.7173	
B24	BL CD4011BE 4X2IN.NANDG NAND GATE RCA CD4011BE	BL 252.7337	
B25	BL CD4098BF 2X MONOFLOP MONO FLOP RCA CD4098BF	BL 517.7550	
B26	BL CD4098BF 2X MONOFLOP MONO FLOP RCA CD4098BF	BL 517.7550	
B27	BL SN74LS22N 2/4INP.NAND. IC 2/4INP.NAND GATE TEXAS SN74LS22N	BL 282.9280	
BR1	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR2	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR3	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BR4	FP KURZSCHLUSSBUCHSE SHORTING PLUG PK 452-70302	FP 491.7042	
BU1	FP BUCHSENLEISTE 24POL ANGLE SOCKET CONNECTOR BERG 67231-012	FP 219.3342	
C1	CK 1,0UF+-10%100V QUADER PLASTIC-FOIL CAPACITOR ROEDERST MKT1822-510/0+10%	CK 006.5091	
C2	CK 10NF+-20% 400V RM10KC PLASTIC-FOIL CAPACITOR ROEDERST KC1849-310/4	CK 006.4808	
C3	CK 10NF+-20% 400V RM10KC PLASTIC-FOIL CAPACITOR ROEDERST KC1849-310/4	CK 006.4808	
C4	CE 1,0UF+-20%35V 5X 4X 7 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR1-1/35	CE 022.8185	
C5	CE 47UF -10+100%16V 9X13 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK47/16	022.7543	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
C6	CC 1 NF+- 5%100V NPO VIEL CERAMIC CAPACITOR ERIE 8133-100-C0G-1NF-J	CC 060.0894	
C7	CE 47UF -10+100%16V 9X13 ELECTROLYTIC CAPACITOR ROEDERST ELKO EK47/16	022.7543	
C8	CE 10UF -10+50% 63V 9X13 ELECTROLYTIC CAPACITOR ROEDERST ELKOEK10/63	CE 022.7650	
C9	CE 15 UF+-20%20V 7X 5X11 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR3-15/20	CE 022.8127	
C10	CE 100NF+-20%35V 5X 4X 7 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR1-0,1/35	CE 022.8156	
C11	CC 1 NF+- 5%100V NPO VIEL CERAMIC CAPACITOR ERIE 8133-100-C0G-1NF-J	CC 060.0894	
C12	CC 22 NF+-20%100V K6000VI CAPACITOR ERIE 8123-100Z5U-223-M	060.1303	
C13	CC 10 NF+-20%100V K6000VI CAPACITOR ERIE 8123-100-Z5U10NF-M	060.1284	
C14	CE 100NF+-20%35V 5X 4X 7 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR1-0,1/35	CE 022.8156	
C15	CE 1,0UF+-20%35V 5X 4X 7 ELECTROLYTIC CAPACITOR ERO-TANTAL TA-ELKOETR1-1/35	CE 022.8185	
C16	CE 10UF -10+50% 63V 9X13 ELECTROLYTIC CAPACITOR ROEDERST ELKOEK10/63	CE 022.7650	
GL1	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL2	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL3	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL4	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL5	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL6	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL7	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
GL8	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL9	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL10	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL11	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL12	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL13	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL14	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL15	AD 1N4448 75V 0,15A UDI DIODE VALVO 1N4448	AD 012.0700	
GL16	AD AAZ15GE 75V 0,14A UDI DIODE VALVO AAZ15	012.0381	
GL17	AD AAZ15GE 75V 0,14A UDI DIODE VALVO AAZ15	012.0381	
GL18	AD AAZ15GE 75V 0,14A UDI DIODE VALVO AAZ15	012.0381	
GL19	AD AAZ15GE 75V 0,14A UDI DIODE VALVO AAZ15	012.0381	
R1	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R2	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R3	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R4	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R5	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R6	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R7	RL 0,35W 274 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/274OHM-F-D	RL 083.0178	
R8	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R9	RL 0,35W 1,82KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1,82K-F-C	RL 082.2277	
R10	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R11	RL 0,35W 150 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/150OHM-F-D	RL 082.9942	
R12	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R13	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R14	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R15	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R16	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R17	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R18	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R19	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R20	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R21	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R22	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R23	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R24	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R25	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R26	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/2210HM-F-D	RL 083.0084	
R27	RL 0,35W 274 KOHM+-1%TK50 RESISTOR DRALORIC SMA/207/274K-F-C	RL 083.2364	
R28	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R29	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R30	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R31	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R32	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R33	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R34	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R35	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R36	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R37	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R38	RL 0,35W 68,1KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/68,1K-F-C	RL 082.2602	
R39	RL 0,35W 2,74KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/2,74K-F-D	RL 083.0926	
R40	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/8,25K-F-D	RL 083.1239	
R41	RL 0,35W 68,1KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/68,1K-F-C	RL 082.2602	
R42	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R43	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R44	RL 0,35W 68,1KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/68,1K-F-C	RL 082.2602	

PF 095.0026 - 0483

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R45	RL 0,35W 1KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/1K-F-C	RL 082.2160	
R46	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R47	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R48	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R49	RL 0,35W 100KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/100K-F-C	RL 082.1764	
R50	RL 0,35W 221 OHM+-1%TK50 RESISTOR DRALORIC SMA0207/221OHM-F-D	RL 083.0084	
R51	RL 0,35W 6,81KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/6,81K-F-C	RL 082.2560	
R52	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R53	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R54	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R55	RN 9X100KOHM+-2%SIL10 H5 RESISTOR NETWORK BOURNS 4310R-101-104	RN 542.5092	
R56	RN 7X 22KOHM+-2%SIL 8 H5 RESISTOR NETWORK BOURNS 4308R-101-223	RN 540.5720	
R57	RN 3X100KOHM+-2%SIL6 H5 RESISTOR NETWORK BOURNS 4306R-102-104	RN 282.9309	
R58	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R59	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R60	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/10K-F-D	RL 083.1297	
R62	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R63	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/5,62K-F-C	RL 082.2190	
R64	RL 0,35W 2,74KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/2,74K-F-D	RL 083.0926	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R65	RL 0,35W 2,21KOHM+-1%TK50 RESISTOR DRALORIC SMA 0207/2,21K-F-C	RL 082.2477	
R66	RL 0,35W 3,32KOHM+-1%TK50 RESISTOR DRALORIC SMA0207/3,32K-F-D	RL 083.0990	
ST4	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 3-POLIG	FP 242.3600	
ST5	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 3-POLIG	FP 242.3600	
ST6	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 3-POLIG	FP 242.3600	
ST7	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 3-POLIG	FP 242.3600	
ST8	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 1-POLIG	FP 242.3600	
ST9	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 16POLIG,GETEILT AUF 2X8POL.	FP 242.3600	
ST10	FP INDIREKT.STECKERL.36P. PIN CONNECTOR BERG 75160-102-36 16POLIG,GETEILT AUF 2X8POL.	FP 242.3600	
ST1A	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36 8-POLIG	FP 288.1945	
ST1B	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36 8-POLIG	FP 288.1951	
ST2A	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36 8-POLIG	FP 288.1945	
ST2B	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36 8-POLIG	FP 288.1951	
ST3A	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36	FP 288.1945	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
	8-POLIG		
ST3B	FP STECKERL.IND.36P.R2,54 ANGLE PIN CONNECTOR BERG 75168-117-36 8-POLIG	FP 288.1951	
T1	AK BCY79IX PNP 45V 200MA TRANSISTOR SIEMENS BCY79IX	AK 010.3777	
			- ENDE -

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Liste	Benennung / Beschreibung	Z	Kurztext	Sachnummer (VAR)	ÄZ FP	DIN A	Blatt Nr.
STUECKLISTE	ZUBEH./ACCESS. SUF2	Z		282.9096		0Z	1

Aussteller Konstr.	ÄZ ST	Änd. Mittlg.	Datum	Name	Schaltteilliste	Aussteller Fertigungsplan	Fertigungsvorschrift	Stückzahlbereich	K.-St.	Werk
1FMB STE	B	31454	0484	SR						

enthalten in Sachnummer	Datum	Name	Strf. bzw. Stg. pro Los	Datum	Priorität	Los-Nr.	Stückzahl
282.8819				304	3	EPF	

zugehöriges Verzeichnis	Teile/Strf. Teile/Stange	Losgröße	Diapo Art	DLZ	Lagerort
282.8819 SUF2 VIDEO-RAUSCHGENERAT.					

Arbg. Nr.	Lfd. Nr. / Termin	Menge / K.-St.	ME	Kennzeichen / Arb.-Pl.-Gr.	Benennung / Beschreibung / Arbeitsgang	Z	Kurztext B	Sachnummer (VAR) / Werkzeug-Nr.	LGr.	Besch. Art AK / tr	Einbau-Code / te
	10	000	S		OHNE ZEICHN./NO SPEC.DRAW			999.9710			
	1				ZU/FOR *282.8819.03						
	2				**********						
	20	100	S		DS ANSCHL.KAB.M.SCHUKO-A.		DS	025.2365		B1B	
	1				EARTHING CONTACT EURO PLUG+SOCKET						
	30	100	S		SCHILD	Z		282.9044		F5B	
	40	100	S		SCHILD	Z		282.9050		F5B	
	45	200	S		SS SCHMELZS.TO,8 DIN41662		SS	020.7417		B1E	
	1				FUSE						
	60	200	S		SS SCHMELZ.T 0,4 DIN41662		SS	020.7323		B1E	
	1				FUSE						
	61	200	S		SS SCHMELZ.TO,315DIN41662		SS	020.7300		B1E	
	10				FUSE						
	62	300	S		SS SCHMELZ.TO,63 DIN41662		SS	020.7381		B1E	
	10				FUSE						
	65	100	S		SCHILD			282.9773		F5A	
	1				LABEL						
	70	100	S		BESCHREIBUNG/MANUAL	Z		283.0005		F0A	
	1				OZ.						
										ENDE	

Werk: München 10, Teisnach 12, Memmingen 20
Mengeneinheit ME: Stück = S, Gramm = G, Kilogr. = K; mm = W, m = M, mm² = D; cm² = C, m² = Q, cm³ = Y; Liter = L
VAR = Variantenkennzahl, ÄZ = Änderungszustand, DLZ = Durchlaufzeit

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	01	0780	SUF2-Z7 TELEFONIEKANALBELZ	282.8860 SA	1

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
B1	BO TL084ACN 4XBIFET-OP.	BO 283.1724	282.8860
BU1	FP BUCHSENLEISTE 13POL.	FP 510.1391	282.8860
C1	CK 2,2NF+-1%63V 6,3QUAD.	CK 099.1304	282.8860
	SIEMENS B33531-A5222-F		
C2	CK 2,7NF+-1%63V6,3QUX11KP	CK 340.6754	282.8860
	SIEMENS B33531-A5272-F		
C3	CK 820PF+-1%63V6,3QUX11KP	CK 340.6748	282.8860
	SIEMENS B33531-A5821-F		
C4	CK 12NF+-1%63V7,5QUX13 KP	CK 340.6760	282.8860
	SIEMENS B33531-A5123-F		
C5	CK 12NF+-1%63V7,5QUX13 KP	CK 340.6760	282.8860
	SIEMENS B33531-A5123-F		
C6	CC 10NF-20+50%7X8R6000	CC 087.7525	282.8860
	THOMSON COX767/10000/PF-20+5		
R1	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.8860
	DRALORIC SMA0207/10K-F-D		
R2	RL 0,25W 182 KOHM+-1%TK50	RL 083.2193	282.8860
	DRALORIC SMA0207/182K-F-C		
R3	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.8860
	DRALORIC SMA0207/10K-F-D		
R4	RL 0,25W 105 KOHM+-1%TK50	RL 083.2029	282.8860
	DRALORIC SMA0207/105K-F-C		
R5	RL 0,25W 6,34KOHM+-1%TK50	RL 083.1151	282.8860
	DRALORIC SMA0207/6,34K-F-D		
R6	RL 0,25W 57,6KOHM+-1%TK50	RL 083.6830	282.8860
	DRALORIC SMA0207/57,6K-F-C		
R7	RL 0,25W 105 KOHM+-1%TK50	RL 083.2029	282.8860
	DRALORIC SMA0207/105K-F-C		
R8	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.8860
	DRALORIC SMA0207/10K-F-D		
R9	RL 0,25W 5,36KOHM+-1%TK50	RL 082.2460	282.8860
	DRALORIC SMA 0207/5,36K-F-C		
R10	RL 0,25W 5,36KOHM+-1%TK50	RL 082.2460	282.8860
	DRALORIC SMA 0207/5,36K-F-C		
R11	RL 0,25W 182 KOHM+-1%TK50	RL 083.2193	282.8860
	DRALORIC SMA0207/182K-F-C		
R12	RL 0,25W 40,2KOHM+-1%TK50	RL 083.1751	282.8860
	DRALORIC SMA/207/40,2K-F-C		
	TRIMMWERT		
R14	RL 0,25W 953 KOHM+-1%TK50	RL 083.2870	282.8860
	DRALORIC SMA0207/953K-F-C		
R15	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.8860
	DRALORIC SMA0207/10K-F-D		
R16	RL 0,25W 20,0KOHM+-1%TK50	RL 083.1522	282.8860
	DRALORIC SMA/207/20K-F-C		
R17	RF 0,25W180 OHM +-5%	RF 069.1812	282.8860
	DRALORIC LCA0207/+-5%180		
RS1	SR 5V3600HM1MAL1RH-JC-GEH	SR 412.0027	282.8860
	CLARE PRME 15005		
RS2	SR 5V3600HM1MAL1RH-JC-GEH	SR 412.0027	282.8860
	CLARE PRME 15005		

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ROHDE&SCHWARZ	ÄZ	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock No.	Blatt Page
	05	0683	SUF2-Z4 CCIR-REC-559-FILT	282.9615 SA	1

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
B1	BO TL084ACN 4XBIFET-OP. 4XBIFET-OP. TL084ACN TEXAS TL084ACN	BO 283.1724	
BU1	FP BUCHSENLEISTE 13POL. FEMALE MULTIP. CONNECTOR BERG 76323-213	FP 510.1391	
C1	CK 4,7NF+-1%63V6,3X11 KP PLASTIC-FOIL CAPACITOR SIEMENS B33531-A5472-F	CK 283.1701	
C2	CK 4,7NF+-1%63V6,3X11 KP PLASTIC-FOIL CAPACITOR SIEMENS B33531-A5472-F	CK 283.1701	
C3	CK 18NF+-1%63V7,50AX13 KP CAPACITOR SIEMENS B33531-A5183-F	CK 099.1933	
C4	CK 33NF+-1% 63V 1CQARD. CAPACITOR SIEMENS B33531-A5333-F	CK 294.6351	
C5	CC 10 NF +100%HDK6000 CERAMIC CAPACITOR VALVO 2222 640 53103	CC 022.0678	
R1	RL 0,125W10,0KOHM+-1%TK50 RESISTOR DALE MF1/10 10,0K 1%TK50	RL 067.4772	
R2	RL 0,125W8,25KOHM+-1%TK50 RESISTOR DALE MF1/10 8,25K 1%TK50	RL 067.4750	
R3	RL 0,125W56,2KOHM+-1%TK50 RESISTOR DALE MF1/10 56,2K 1%TK50	RL 067.4950	
R4	RL 0,125W44,2KOHM+-1%TK50 RESISTOR DALE MF1/10 44,2K 1%TK50	RL 086.3732	
R5	RL 0,125W10,0KOHM+-1%TK50 RESISTOR DALE MF1/10 10,0K 1%TK50	RL 067.4772	
R6	RL 0,125W44,2KOHM+-1%TK50 RESISTOR DALE MF1/10 44,2K 1%TK50	RL 086.3732	
R7	RL 0,125W11,5KOHM+-1%TK50 RESISTOR DALE MF1/10 11,5K 1%TK50	RL 086.3310	
R8	RL 0,125W10,0KOHM+-1%TK50 RESISTOR DALE MF1/10 10,0K 1%TK50	RL 067.4772	
R9	RL 0,125W54,9KOHM+-1%TK50 RESISTOR DALE MF1/10 54,9K 1%TK50 TRIMMWERT	RL 086.3803	
R10	RL 0,125W88,7KOHM+-1%TK50 RESISTOR DALE MF1/10 88,7K 1%TK50	RL 086.3955	
R11	RL 0,125W28,7KOHM+-1%TK50 RESISTOR	RL 086.3603	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
	DALE MF1/10 28,7K 1%TK50		
R12	RL 0,125W10,0KOHM+-1%TK50 RESISTOR	RL 067.4772	
	DALE MF1/10 10,0K 1%TK50		
R13	RL 0,125W1000HM+-1%TK50 RESISTOR	RL 067.4295	
	DALE MF1/10 100 OHM1%TK50		
R14	RL 0,125W1,00KOHM+-1%TK50 RESISTOR	RL 067.4537	
	DALE MF1/10 1,00K 1%TK50		
RS1	SR 5V3600HM1MAL1RH-JC-GEH RELAY	SR 412.0027	
	CLARE PRME 15005		
BIS/TO RS2			
			- ENDE -

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	03	0181	SUF2-Z5 CCIR-REC-571-FIL.Z	282.9644 SA	1

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
B1	BO TL084ACN 4XBIFET-OP.	BO 283.1724	282.9644
	TEXAS TL084 ACN		
BU1	FP BUCHSENLEISTE 13POL.	FP 510.1391	282.9644
C1	CK 15NF+-1%63V7,5QUX13 KP	CK 340.8063	282.9644
	SIEMENS B33531-A5153-F		
C2	CK 1,8NF+-1%63V6,3X11 KP	CK 283.1699	282.9644
	SIEMENS B33531-A5182-F		
C3	CK 820PF+-1%63V6,3QUX11KP	CK 340.6748	282.9644
	SIEMENS B33531-A5821-F		
C4	CK 10NF+-1%63V7,5QUX13 KP	CK 340.9076	282.9644
	SIEMENS B33531-A5103-F		
C5	CK 10NF+-1%63V7,5QUX13 KP	CK 340.9076	282.9644
	SIEMENS B33531-A5103-F		
C6	CC 10NF-20+50%7X8R6000	CC 087.7525	282.9644
	THOMSON COX767/10000/PF-20+5		
R1	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.9644
	DRALORIC SMA0207/10K-F-D		
R2	RL 0,25 147 KOHM+-1%TK50	RL 082.1770	282.9644
	DRALORIC SMA02071147K-F-C		
R3	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.9644
	DRALORIC SMA0207/10K-F-D		
R4	RL 0,25W 75,0KOHM+-1%TK50	RL 083.1916	282.9644
	DRALORIC SMA/207/75K-F-C		
R5	RL 0,25W17,2KOHM+-0,1%T25	RL 084.3512	282.9644
	DRALORIC SMA0207/17,2-B-E		
R6	RL 0,25W 29,4KOHM+-1%TK50	RL 083.1622	282.9644
	DRALORIC SMA0207/29,4K-F-C		
R7	RL 0,25W 40,2KOHM+-1%TK50	RL 083.1751	282.9644
	DRALORIC SMA/207/40,2K-F-C		
R8	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.9644
	DRALORIC SMA0207/10K-F-D		
R9	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.9644
	DRALORIC SMA0207/10K-F-D		
R10	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.9644
	DRALORIC SMA0207/10K-F-D		
R11	RL 0,25W 182 KOHM+-1%TK50	RL 083.2193	282.9644
	DRALORIC SMA0207/182K-F-C		
R12	RL 0,25W 40,2KOHM+-1%TK50	RL 083.1751	282.9644
	DRALORIC SMA/207/40,2K-F-C		
	TRIMMWERT		
R13	RL 0,25W 100KOHM+-1%TK50	RL 082.1764	282.9644
	DRALORIC SMA0207/100K-F-C		
R14	RL 0,25W 348 KOHM+-1%TK50	RL 083.2464	282.9644
	DRALORIC SMA0207/348K-F-C		
R15	RL 0,25W 10,0KOHM+-1%TK50	RL 083.1297	282.9644
	DRALORIC SMA0207/10K-F-D		
R16	RL 0,25W 340 KOHM+-1%TK50	RL 083.2458	282.9644
R17	RF 0,25W180 OHM +-5%	RF 069.1812	282.9644
	DRALORIC LCA0207/+-5%180		
RS1	SR 5V360OHM1MAL1RH-JC-GEH	SR 412.0027	282.9644
	CLARE PRME 15005		
RS2	SR 5V360OHM1MAL1RH-JC-GEH	SR 412.0027	282.9644
	CLARE PRME 15005		

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ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	05	0182	SUF2-Z6 CCIR-571-PROGRAMM	282.9673 SA	1

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
B1	BL SN7474N -0+75 DIL FLIP TEXAS SN7474N	BL 009.3354	282.9673
B2	BL SN74LS14N 6/SCHMITT-TR TEXAS SN74LS14N	BL 266.4712	282.9673
B3	BL MC14538BCP 2XMONOFLOP MOTOROLA MC14538BCP	BL 252.7389	282.9673
B4	BL CD4520BE 2XBIN.COUNTER RCA CD4520BE	BL 299.6908	282.9673
B5	BL CD4011BE 4/2INP.NANDG. RCA CD4011BE	BL 252.7337	282.9673
B6	BL CD4023BE 3/3INP.NANDG. RCA CD4023BE	BL 086.7109	282.9673
B7	BL SN74LS374N 8BIT-D-REG. TEXAS SN74LS374N	BL 282.9696	282.9673
B8	BL SN74LS374N 8BIT-D-REG. TEXAS SN74LS374N	BL 282.9696	282.9673
BR1	FP KURZSCHLUSSBUCHSE BERG 65474-004	FP 491.7042	282.9673
BIS BR28	FP KURZSCHLUSSBUCHSE BERG 65474-004	FP 491.7042	282.9673
C1	CE 1UF -10+100%63V 9X13 ROEDERST ELKO EK 1/63	CE 022.7620	282.9673
C2	CE 100UF-10+100%16V 11X13 SIEMENS B41316-A4107-Z	CE 022.7550	282.9673
C3	CE 2,2UF-10+100%63V 9X13 ROEDERST ELKO EK 2/63	CE 022.7637	282.9673
C4	CE 2,2UF-10+100%63V 9X13 ROEDERST ELKO EK 2/63	CE 022.7637	282.9673
C5	CK 68NF+-20%100V QUADER ROEDERST MKT1822-368/0	CK 006.5027	282.9673
C6	CK 68NF+-20%100V QUADER ROEDERST MKT1822-368/0	CK 006.5027	282.9673
C7	CC 39PF+-2%4X5NP0 DRALORIC EDPU4X5/39/2%/NP0	CC 087.6493	282.9673
R1	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
R2	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
R3	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
R4	RF 0,25W100 OHM +-5% DRALORIC LCA0207/+-5%100	RF 069.1012	282.9673
R5	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
R6	RF 0,25W 39KOHM +-5% DRALORIC LCA0207/+-5%39K	RF 069.3938	282.9673
R7	RF 0,25W 39KOHM +-5% DRALORIC LCA0207/+-5%39K	RF 069.3938	282.9673
R8	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
R9	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
R10	RF 0,25W1,5KOHM +-5%	RF 069.1529	282.9673

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Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R11	DRALORIC LCA0207/+-5%1,5K RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9673
ST1	BESTEHT AUS FP 288.1945 FP 288.1951		282.9673
ST3	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 2X8-POLIG	FP 242.3600	282.9673
ST4	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 4X2-POLIG	FP 242.3600	282.9673
ST5	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 3X3-POLIG	FP 242.3600	282.9673
ST6	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 3X3-POLIG	FP 242.3600	282.9673
ST7	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 3X3-POLIG	FP 242.3600	282.9673
ST8	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 2X3-POLIG	FP 242.3600	282.9673
ST9	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 4X3-POLIG	FP 242.3600	282.9673
ST10	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 4X3-POLIG	FP 242.3600	282.9673
ST11	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 4X3-POLIG	FP 242.3600	282.9673
ST12	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 4X3-POLIG	FP 242.3600	282.9673
V1	VL LOETOESE 7,5 X 1,4	VL 082.5230	282.9673

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und schadenersatzpflichtig.

ROHDE&SCHWARZ	ÄZ	Datum Date	Schaltteilliste für Parts list for SUF2-Z2 DREIECKRAUSCHEN	Sachnummer Stock No.	Blatt Page
	04	0582		282.9715 SA	1

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
BU1	FP BUCHSENLEISTE 13POL. BERG 76323-213	FP 510.1391	
C1	CC 39PF+-2%4X5NPO CAPACITOR DRALORIC EDPU4X5/39/2%/NPO	CC 087.6493	
C2	CC 12PF+-2%3X4NPO CAPACITOR DRALORIC EDPU3X4/12/2%/NPO	CC 087.6435	
C3	CT 16 PF N470 LIEG.ABGL.O DISC TRIMMER STETTNER 10S-TRIK006-4/20N470	CT 025.6960	
C4	CC 27PF+-2%4X5NPO CAPACITOR DRALORIC EDPU4X5/27/2%/NPO	CC 087.6470	
C5	CC 56PF+-2%5X6NPO CAPACITOR DRALORIC EDPU5X6/56/2%NPO	CC 087.6512	
C6	CC 39PF+-2%4X5NPO CAPACITOR DRALORIC EDPU4X5/39/2%/NPO	CC 087.6493	
C7	CC 68PF+-2%6X7NPO CAPACITOR DRALORIC EDPU6X7/68/2%NPO	CC 087.6529	
C8	CC 8,2PF+-0,25PF3X4NPO CAPACITOR	CC 087.6412	
C9	CC 68PF+-2%6X7NPO CAPACITOR DRALORIC EDPU6X7/68/2%NPO	CC 087.6529	
C10	CC 3,9PF+-0,25PF3X4NPO CAPACITOR DRALORIC EDPU3X4/3,9/0,IK/NPO	CC 087.6370	
C11	CC 10 NF +100%HDK6000 CERAMIC CAPACITOR THOMSON DQX710/10000PF/100V	CC 022.0678	
GL1	AD 1N4448 SI 75V 150MIA DIODE 1N4448 VALVO 1N4448	AD 012.0700	
L1	LD 4,70UH10%1,200HM0,239A CHOKE DELEVAN DROSSEL1025-36	LD 067.2940	
L2	LD 12UH BEI 0,62A1,1 OHM CHOKE JAHRE 7411-12R+2%	LD 066.9806	
L3	LD 12UH BEI 0,62A1,1 OHM CHOKE JAHRE 7411-12R+2%	LD 066.9806	
L4	LD 15UH BEI 0,46A 1,200HM CHOKE JAHRE 74.11-15ROG	LD 282.9338	
R1	RL 0,125W1,00KOHM+-1%TK50 RESISTOR DALE MF1/10 1,00K 1%TK50	RL 067.4537	

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Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
R2	RL 0,125W2210HM+-1%TK50 RESISTOR DALE MF1/10 221 OHM1%TK50	RL 067.4372	
R3	RF 0,25W2,7KOHM +-5% RESISTOR DRALORIC LCA0207/+-5%2,7K	RF 069.2725	
R4	RL 0,125W590OHM+-1%TK50 RESISTOR DALE MF1/10 590 OHM1%TK50	RL 086.2388	
R5	RL 0,125W634OHM+-1%TK50 RESISTOR DALE MF1/10 634 OHM1%TK50	RL 086.2407	
R6	RL 0,125W3,16KOHM+-1%TK50 RESISTOR DALE MF1/10 3,16K 1%TK50 TRIMMWERT	RL 086.2971	
R7	RL 0,125W54,9KOHM+-1%TK50 RESISTOR DALE MF1/10 54,9K 1%TK50	RL 086.3803	
R8	RF 0,25W 6,8 OHM +-5% RESISTOR DRALORIC LCA0207/+-5%6,8	RF 074.0079	
R9	RL 0,125W47,5OHM+-1%TK50 RESISTOR DALE MF1/10 47,5OHM1%TK50	RL 067.4214	
R10	RF 0,25W3,3KOHM +-5% RESISTOR DRALORIC LCA0207/+-5%3,3K	RF 069.3321	
R11	RF 0,25W150 OHM +-5% RESISTOR DRALORIC LCA0207/+-5%150	RF 069.1512	
R12	RL 0,125W2,21KOHM+-1%TK50 RESISTOR DALE MF1/10 2,21K 1%TK50	RL 067.4614	
R13	RL 0,125W2,21KOHM+-1%TK50 RESISTOR DALE MF1/10 2,21K 1%TK50	RL 067.4614	
R14	RF 0,25W3,3KOHM +-5% RESISTOR DRALORIC LCA0207/+-5%3,3K	RF 069.3321	
R15	RL 0,125W1000HM+-1%TK50 RESISTOR DALE MF1/10 100 OHM1%TK50	RL 067.4295	
RS1	SR 5V360OHM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
RS2	SR 5V360OHM1MAL1RH-JC-GEH RELAY CLARE PRME 15005	SR 412.0027	
T1	AK 2N3947 SI NPN 40V 0,2A TRANSISTOR 2N3947 MOTOROLA 2N3947/R&S-LV	AK 280.9860	
T2	AK BFX48 SIPNP 30V 100MIA TRANSISTOR BFX48 SGS BFX48	AK 010.3202	
T3	AK 2N3947 SI NPN 40V 0,2A	AK 280.9860	

Kennzeichen Component No.	Benennung/Beschreibung Designation	Sachnummer Stock No.	enthalten in contained in
T4	TRANSISTOR 2N3947 MOTOROLA 2N3947/R&S-LV AK 2N3947 SI NPN 40V 0,2A TRANSISTOR 2N3947 MOTOROLA 2N3947/R&S-LV	AK 280.9860	
			- ENDE -

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ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	05	0181	SUF2-Z3 ROSA RAUSCHEN Z	282.9815 SA	1

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
B1	BO LF353BH 2XBIFET-OPAMP. NSC LF 353 BH	BO 282.5210	282.9815
BU1	FP BUCHSENLEISTE 13POL.	FP 510.1391	282.9815
C1	CK 1,5NF+-1,25%63V7,5QUAD SIEMENS B33531-A5152-F	CK 213.4360	282.9815
C2	CK 2,2NF+-1%63V 6,3QUAD. SIEMENS B33531-A5222-F	CK 099.1304	282.9815
C3	CK 1,8NF+-1%63V6,3X11 KP SIEMENS B33531-A5182-F	CK 283.1699	282.9815
C4	CK 3,3NF+-1%63V6,3QUX11KP SIEMENS B33531-A5332-F	CK 340.9030	282.9815
C5	CK 820PF+-1%63V6,3QUX11KP SIEMENS B33531-A5821-F	CK 340.6748	282.9815
C6	CK 5,6NF+-1%63V6,3QUX11KP SIEMENS B33531-A5562-F	CK 340.9047	282.9815
C7	CK 560PF+-1%63V6,3X11 KP SIEMENS B33531-A5561-F	CK 283.1660	282.9815
C8	CK 18NF+-1%63V7,50AX13 KP SIEMENS B33531-A5183-F	CK 099.1933	282.9815
C9	CC 10NF-20+50%7X8R6000 THOMSON C0X767/10000/PF-20+5	CC 087.7525	282.9815
C10	CE 10 UF+-20%16V 7X 4X 8 ERO-TANTAL TA-ELKOETR2-10/15	CE 022.8085	282.9815
R1	RL 0,125W6,65KOHM+-1%TK50 VALVO MR24C6,65K1%TK50	RL 086.3149	282.9815
R2	RL 0,125W3,24KOHM+-1%TK50 VALVO MR24C3,24K1%TK50	RL 086.2907	282.9815
R3	RL 0,125W200KOHM+-1%TK50 VALVO MR24C,200K,1%TK50	RL 067.5085	282.9815
R4	RF 0,25W 1 MOHM +-5% DRALORIC LCA0207/+-5%1,0M	RF 069.1058	282.9815
R8	RL 0,125W17,8KOHM+-1%TK50 VALVO MR24C17,8K1%TK50	RL 086.3455	282.9815
R9	RL 0,125W2,21KOHM+-1%TK50 VALVO RN55D2211F TRIMMWERT	RL 067.4614	282.9815
R10	RF 0,25W 18KOHM +-5% DRALORIC LCA0207/+-5%18K	RF 069.1835	282.9815
R11	RL 0,125W12,4KOHM+-1%TK50 VALVO MR24C12,4K1%TK50	RL 086.4297	282.9815
R12	RL 0,125W52,3KOHM+-1%TK50 VALVO MR24C52,3K1%TK50	RL 086.3784	282.9815
R13	RL 0,125W76,8KOHM+-1%TK50 VALVO MR24C76,8K1%TK50	RL 086.3903	282.9815
R14	RL 0,125W165KOHM+-1%TK50 VALVO MR24C165K1%TK50	RL 086.4145	282.9815
R15	RL 0,125W243KOHM+-1%TK50 VALVO MR24C,243K,1%TK50	RL 067.5104	282.9815
R16	RL 0,25W 261 KOHM+-1%TK50 DRALORIC SMA0207/261K-F-C	RL 083.2341	282.9815
R17	RF 0,25W100 OHM +-5% DRALORIC LCA0207/+-5%100	RF 069.1012	282.9815
R18	RF 0,25W100KOHM +-5% DRALORIC LCA0207/+-5%100K	RF 069.1041	282.9815

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ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	05	0181	SUF2-Z3 ROSA RAUSCHEN Z	282.9815 SA	2

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
RS1	SR 5V3600HM1MAL1RH-JC-GEH CLARE PRME 15005	SR 412.0027	282.9815
RS2	SR 5V3600HM1MAL1RH-JC-GEH CLARE PRME 15005	SR 412.0027	282.9815
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und schadenersatzpflichtig.

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	08	0182	SUF2-Z1 IEC-INTERFACE	282.9915 SA	1

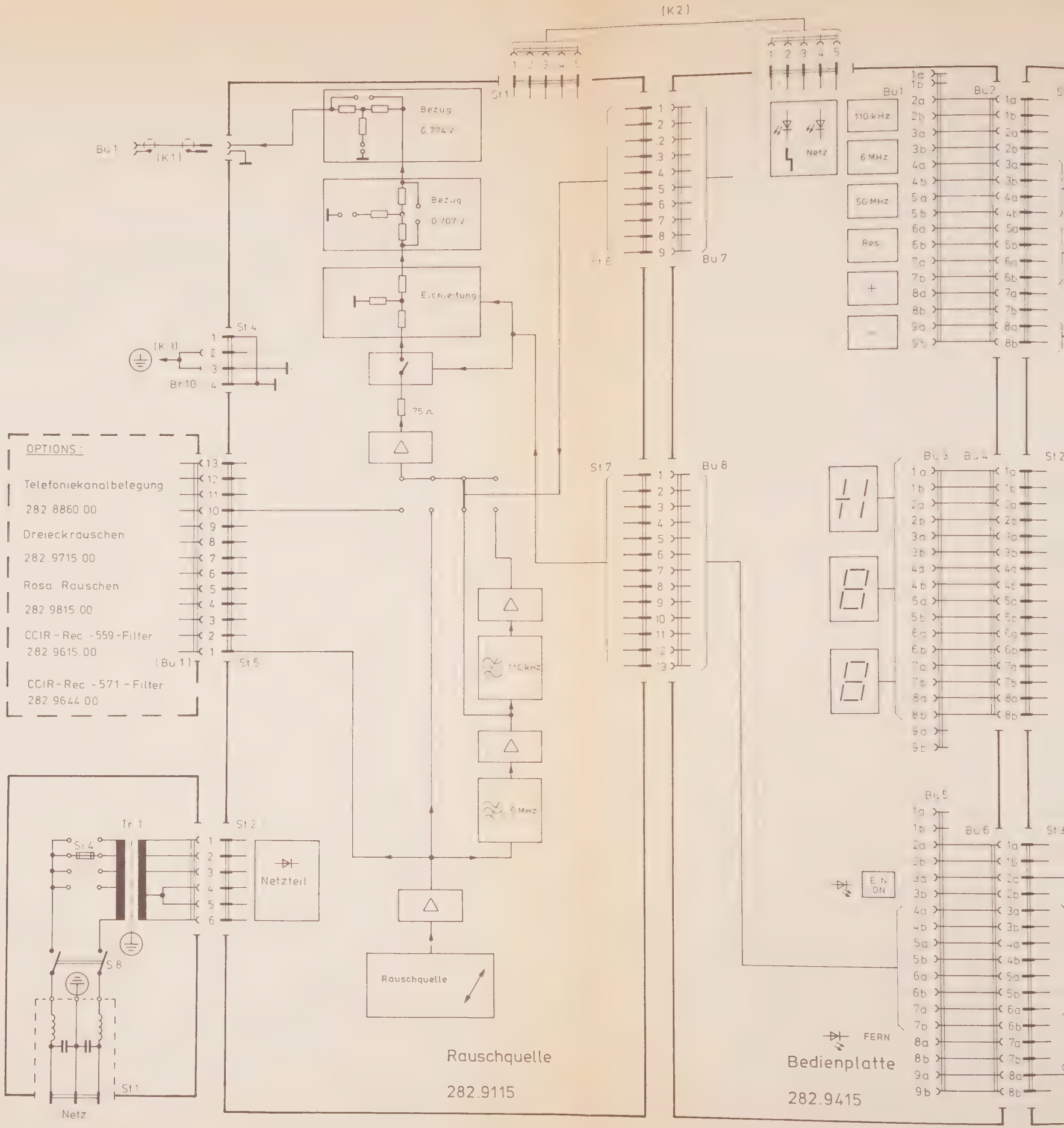
Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
B1	BL SN74LS04N 6/INVERTER TEXAS SN74LS04ON	BL 266.2010	282.9915
B2	BL SN7416N HEXINV.O/C 15V TEXAS SN7416N	BL 412.8440	282.9915
B3	BL SN74LS04N 6/INVERTER TEXAS SN74LS04ON	BL 266.2010	282.9915
B4	BJ HEF4738VP IEC-BUS-INT. VALVO HEF4738VP	BJ 302.7157	282.9915
B5	BL SN74LS11N 3/3INP.AND TEXAS SN74LS11N	BL 266.4135	282.9915
B6	BL CD4014BE 8BIT-SHIFTREG RCA CD4014BE	BL 086.7038	282.9915
B7	BL CD4014BE 8BIT-SHIFTREG RCA CD4014BE	BL 086.7038	282.9915
B8	BL SN74LS04N 6/INVERTER TEXAS SN74LS04ON	BL 266.2010	282.9915
B9	BL SN74LS04N 6/INVERTER TEXAS SN74LS04ON	BL 266.2010	282.9915
B10	BL SN4931N OBIS+70 NANDG TEXAS SN4931N	BL 009.3502	282.9915
B11	BL CD4015BE 2/4BIT-SHIFTR RCA CD4015BE	BL 086.7044	282.9915
B12	BL CD4015BE 2/4BIT-SHIFTR RCA CD4015BE	BL 086.7044	282.9915
B13	BL SN4931N OBIS+70 NANDG TEXAS SN4931N	BL 009.3502	282.9915
B14	BL SN74LS30N 8/INP.NAND TEXAS SN74LS30N	BL 266.2049	282.9915
C1	CE 100UF-10+100%25V 13X13 ROEDERST ELKOEK100/25	CE 208.4007	282.9915
C2	CK 100NF+-20%100V QUADER ROEDERST MKT1822-410/0	CK 006.5033	282.9915
C3	CK 4,7NF+-20% 400V RM10KC ROEDERST KC1849-247/4	CK 006.4789	282.9915
C4	CK 5,6NF+-1%63V6,3QUX11KP SIEMENS B33531-A5562-F	CK 340.9047	282.9915
C5	CK 5,6NF+-1%63V6,3QUX11KP SIEMENS B33531-A5562-F	CK 340.9047	282.9915
C7	CE 100UF-10+100%25V 13X13 ROEDERST ELKOEK100/25	CE 208.4007	282.9915
C8	CK 2,2NF+-1%63V 6,3QUAD. SIEMENS B33531-A5222-F	CK 099.1304	282.9915
C9	CC 330PF+-2%6X9N750 DRALORIC EDPU6X9/330/2%N750	CC 087.6964	282.9915
GL1	AD 1N4448 SI 75V 150MIA VALVO 1N4448	AD 012.0700	282.9915
L1	LD 22,0UH 10% 108 MIA DELEVAN	LD 092.3318	282.9915
L2	LD 22,0UH 10% 108 MIA DELEVAN	LD 092.3318	282.9915
R1	RN 7X3,3KOHM+-2%SIL 8 H5 BECKMAN 764-1-R 3,3KOHM	RN 291.4387	282.9915

Diese Unterlage ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R2	RN 7X6,8KOHM+-2%SIL 8 H5 BECKMAN 764-1-R6,8K	RN 470.6499	282.9915
R3	RN 7X3,3KOHM+-2%SIL 8 H5 BECKMAN 764-1-R 3,3KOHM	RN 291.4387	282.9915
R4	RN 7X6,8KOHM+-2%SIL 8 H5 BECKMAN 764-1-R6,8K	RN 470.6499	282.9915
R5	RF 0,25W2,7KOHM +-5% DRALORIC LCA0207/+-5%2,7K	RF 069.2725	282.9915
R6	RF 0,25W2,7KOHM +-5% DRALORIC LCA0207/+-5%2,7K	RF 069.2725	282.9915
R12	RF 0,25W 1KOHM +-5% DRALORIC LCA0207/+-5%1,0K	RF 069.1029	282.9915
R13	RF 0,25W2,2KOHM +-5% DRALORIC LCA0207/+-5%2,2K	RF 069.2225	282.9915
R14	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
R15	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
R16	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
R17	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
R18	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
R19	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
R20	RF 0,25W 1KOHM +-5% DRALORIC LCA0207/+-5%1,0K	RF 069.1029	282.9915
R21	RN 7X 10KOHM+-2%SIL 8 H5 BOURNS 4308R-101-103	RN 581.2184	282.9915
R22	RF 0,25W2,2KOHM +-5% DRALORIC LCA0207/+-5%2,2K	RF 069.2225	282.9915
R23	RF 0,25W 10KOHM +-5% DRALORIC LCA0207/+-5%10K	RF 069.1035	282.9915
ST3	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 GETEILT AUF 2X8P	FP 242.3600	282.9915
ST4	FP INDIREKT.STECKERL.36P. BERG 75160-102-36 GETEILT AUF 2X8P	FP 242.3600	282.9915
ST1A	FP STECKERL.IND.36P.R2,54 BERG 75168-117-36 12-POLIG	FP 288.1945	282.9915
ST1B	FP STECKERL.IND.36P.R2,54 BERG 75168-117-36 12-POLIG	FP 288.1951	282.9915

- ENDE -

Unbefugte Vervielfältigung, Weitergabe an Dritte sowie Verwertung und Mitteilung ihres Inhalts ist untersagt und schadenersatzpflichtig.



Für diese Zeichnung behalten wir uns alle Rechte vor

ROHDE & SCHWARZ

Zeichn.-Nr. 8819 S							
1FME	Datum						
gezeichnet	3 80						
bearbeitet	3 80						
geprüft							
normgepr							

And-Zust	And Mittg Nr.	Datum	Name
A	26229	6 80	Bt

0 1 2 3 ZENTIMETER

PEO 95 3531 0379

Interfacemode

IEC - 625 - BUS

DATA IN

St9 (Bu5)

St3 (Bu5)

(X11)

(X10)

St2 (Bu6)

(X12)

Bu6

St10

(Bu4)

4 bit Speicher + Treiber

UP - DOWN Logik

Takt - Oszillator

2 auf 4 Decoder

BCD

7 - Segment

Speicher + Zähler

Decodierung Noise ein

Decodierung BCD ↓ Binär

Bu1

St1

2 1/2 dig BCD

EIN / AUS

Digitalplatte

282.9515

Options :

CCIR - Rec. 571 - Progr

282 9673 00

IEC - Interface

282.9915.00

IEC - 625 - Platte

238.2190

Address

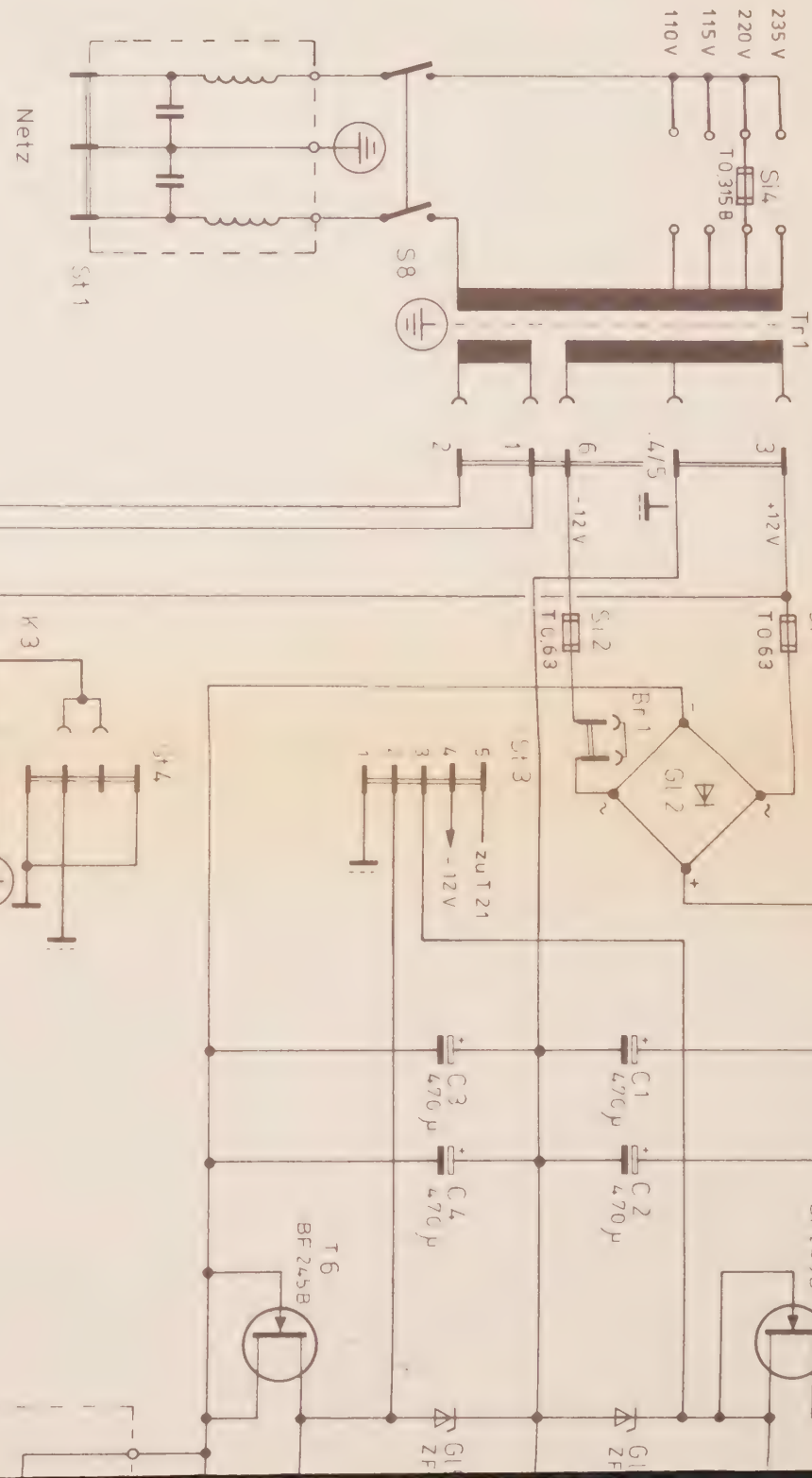
Stromlauf zu	RAUSCHGENERATOR SUF 2	Zeichn - Nr	282.8819 S
	reg. i V 282.8819 V / erste Z 282.8819	Blatt - Nr	

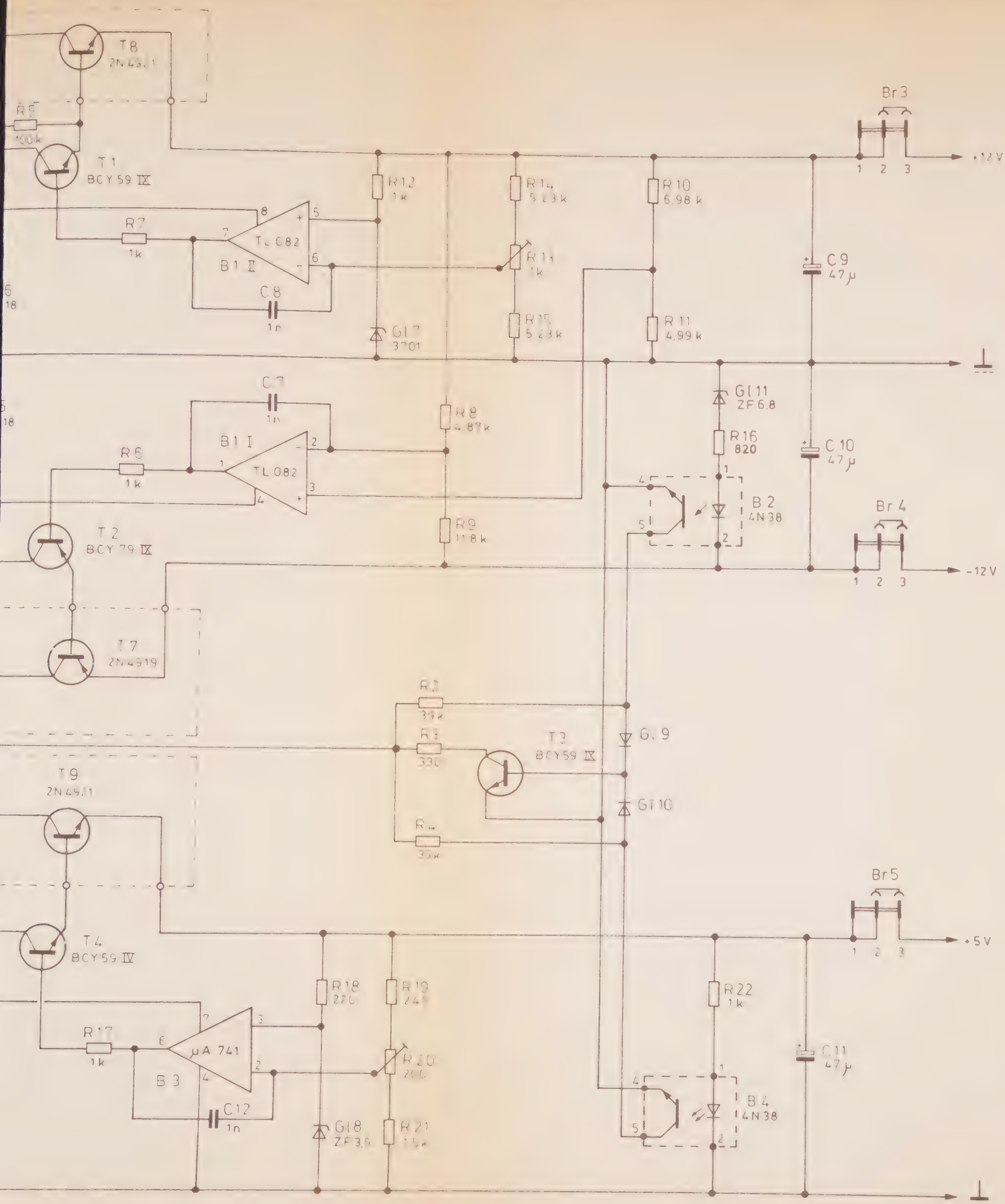
Name	Datum	Name	Änd. zust	Änd. Mittlg. Nr.	Datum	Name
gezeichnet	9.79	Ba	A	26229	6.80	BT
bearbeitet	10.79	Bü	C	28728	4.82	BT
geprüft						
normgepr.						

Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

ROHDE & SCHWARZ . MÜNCHEN

Änd. zust	Änd. Mittlg. Nr.	Datum	Name	Änd. zust	Änd. Mittlg. Nr	Datum	Name





Blatt
SHEET

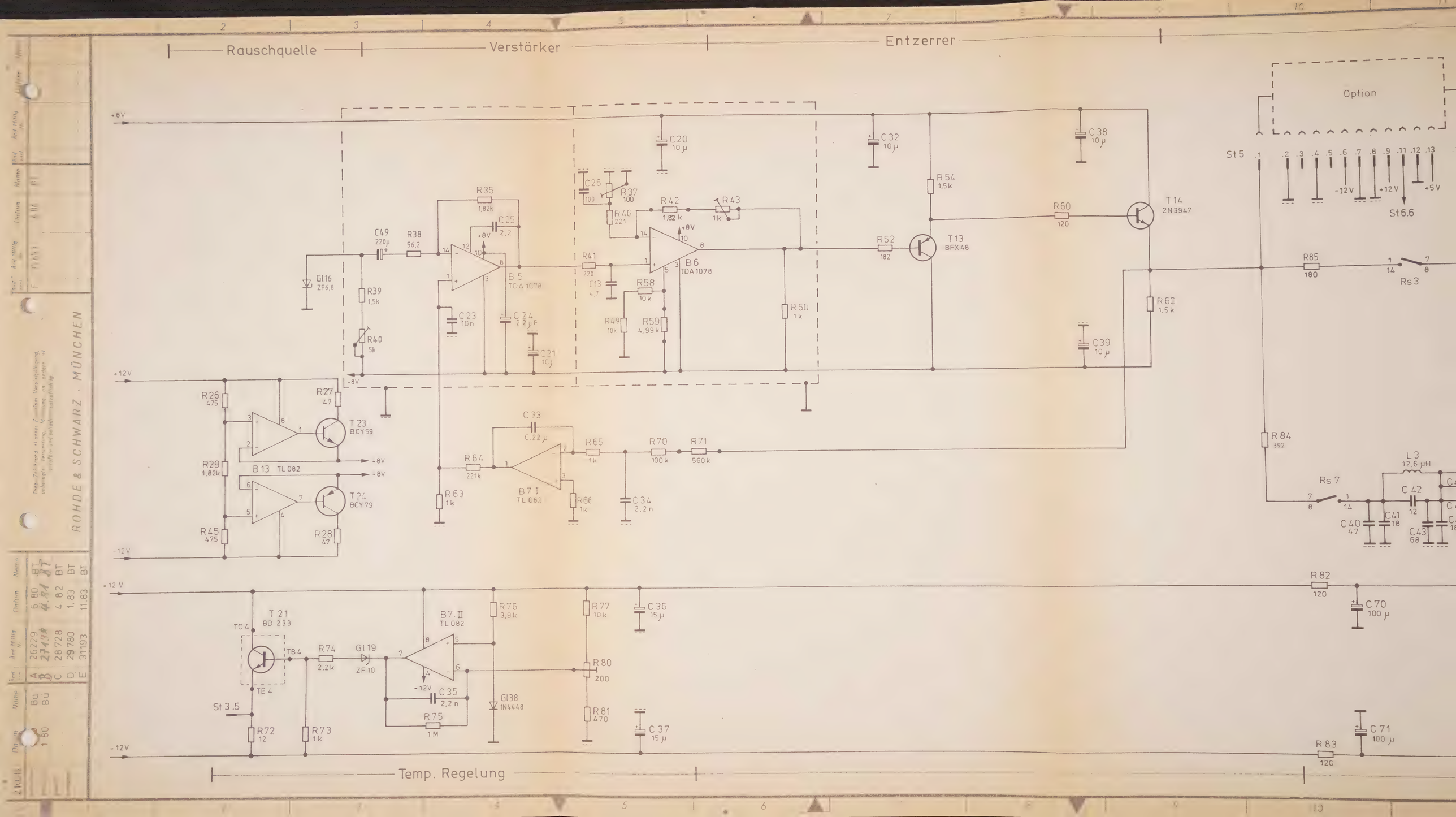
Stromlauf besteht aus 3 Blatt
CIRCUIT DIAGRAM CONSISTS OF 3 SHEETS

Stromlauf zu

Rauschquelle (Netzteil)

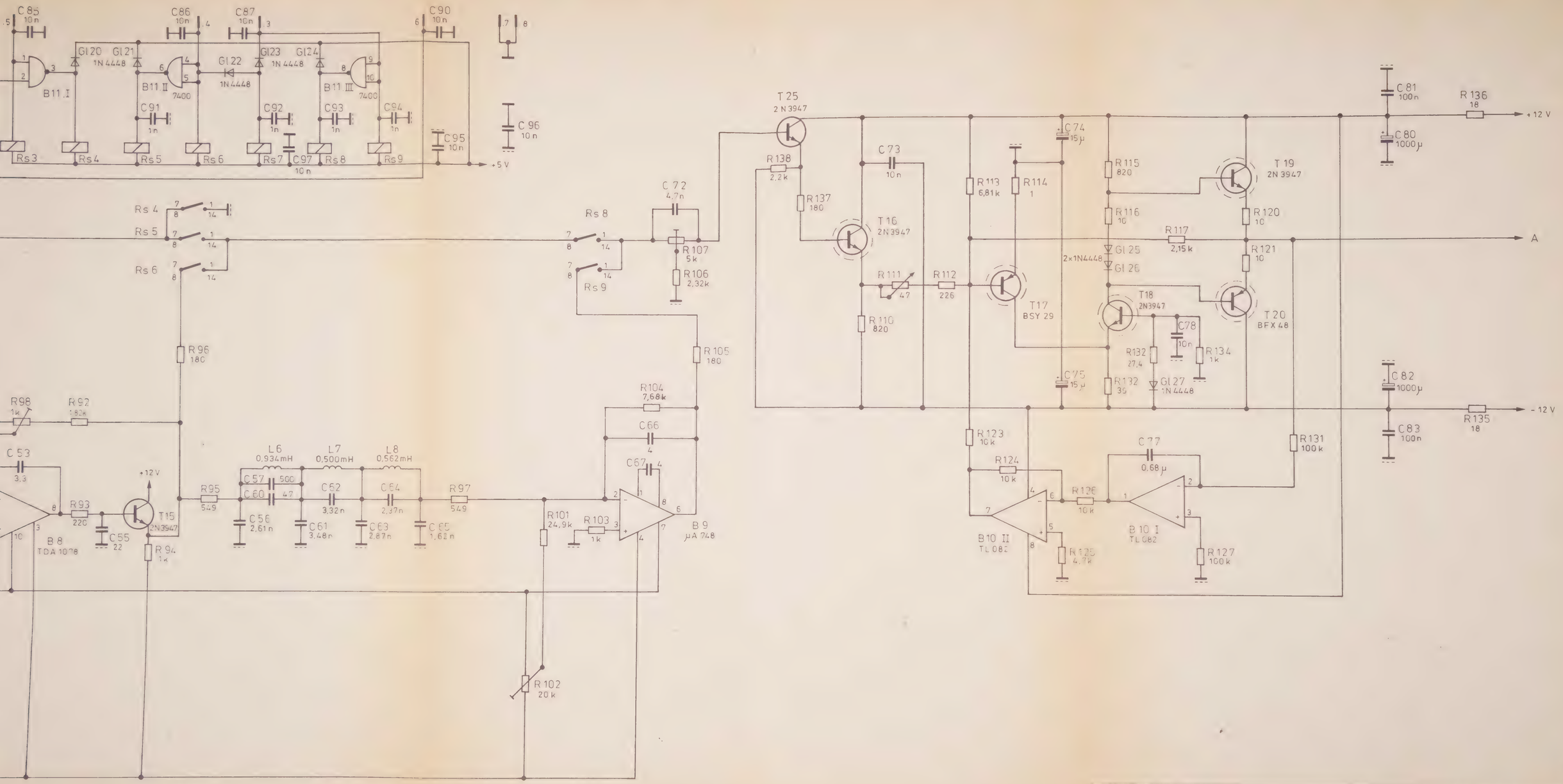
Zeichn. Nr. 282.9115 S

282 8819 V


Rauschquelle
Verstärker
Entzerrer
Temp. Regelung
Option
+8V
-8V
+12V
-12V
GL16 ZF6,8
R39 1,5k
R40 5k
R38 56,2
C49 220µ
R35 1,82k
C25 2,2
C23 10n
C24 2,2µF
C21 10µ
B5 TDA 1078
C20 10µ
C26 100
R37 100
R46 221
R42 1,82 k
R43 1k
R41 220
C13 4,7
R58 10k
R49 10k
R59 4,99k
B6 TDA1078
R50 1k
C32 10µ
R54 1,5k
R52 182
T13 BFX48
R60 120
T14 2N3947
C38 10µ
C39 10µ
R62 1,5k
R26 475
R27 47
T23 BCY59
R29 1,82k
B13 TL 082
T24 BCY79
R45 475
R28 47
C33 0,22µ
R64 221k
R63 1k
B7 I TL 082
R65 1k
R70 100k
R71 560k
R66 1k
C34 2,2n
St5
R85 180
Rs 3
R84 392
Rs 7
L3 12,6µH
C42 12
C40 47
C41 18
C43 68
T21 BD 233
TC 4
TB 4
TE 4
St 3.5
R72 12
R73 1k
R74 2,2k
GL19 ZF10
B7.II TL 082
C35 2,2n
R75 1M
R76 3,9k
GL38 1N4448
R77 10k
R80 200
R81 470
C36 15µ
C37 15µ
R82 120
C70 100µ
R83 120
C71 100µ

Relaisansteuerung

Endstufe



110 kHz Tiefpaß + Verstärker

Blatt SHEET 2

Stromlauf zu: Rauschquelle (Analogteil)

Zeichn. Nr 282.9115 S

282.8819 V

64 dB — 32 dB — 16 dB

Bu 11

A

R140 75

Rs 30

L 10

Rs 31

R 141 100

C 110 39

Rs 12

Rs 15

Rs 11

R 143 1.47k

R 145 1.47k

R 142 78.7

R 144 39.2

C 118 100

C 111 10n

+5V

L 11

Rs 17

Rs 19

Rs 16

R 150 1.47k

Rs 18

R 147 78.7

R 151 78.7

C 112 8

L 12

Rs 21

R 152 54.9

R 154 54.9

L 13

R 153 24.3

C 113 47

C 114 5.6

Rs 20

R 155 32.4

C 117 22µ

Rs 31

Rs 30

Rs 11

Rs 13

Rs 15

Rs 17

Rs 14

Br 10

Gl 30 1N4448

C 122 10n

C 121 10n

B 12 I

C 120 10n

St 7

13

Aus

Gl 31 1N4448

C 125 10n

C 124 10n

B 12 II

12

64 dB

C 126 10n

C 130 10n

Rs 16

Rs 18

Rs 17

Rs 19

Gl 32 1N4448

C 132 10n

B 12 III

C 131 10n

11

32 dB

Rs 20

Rs 21

C 138 10n

Gl 33 1N4448

C 140 10n

C 136 10n

B 12 IV

C 135 10n

10

16 dB

Rs 22

C 141 10n

C 142 10n

9

8 dB

Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

ROHDE & SCHWARZ · MÜNCHEN

	Name	Datum	And Mitteilg Nr.	Änd. zust.
gezeichnet	BT	4.81	27198	B
bearbeitet			26229	A
geprüft				
normgepr.				

1FME

8 dB — 4 dB — 2 dB — 1 dB — 2,23 dB — 3 dB

R157 32.4 — L14 — R160 16.9 — R162 16.9 — L15 — R163 8.66 — R165 8.66 — L16 — R166 4.32 — R170 4.32 — L17 — R171 9.53 — R173 9.53 — L18 — R174 12.7 — R175 12.7 — Bu12

Rs25 Rs27 Rs29 Br6 Br8

C115 5.6 · R161 158 · Rs24 · +5V · C170 10n · R164 324 · Rs26 · R167 649 · Rs28 · R172 287 · Br7 · Br9 · R176 215 · R177 120 · C116 18

Rs22 · Rs23

Rs24 Rs25 Rs26 Rs27 Rs28 Rs29 C161 0,1µ C160 2,2n

Gl34 1N4448 C144 10n · C143 10n · B12.V

Gl35 1N4448 C150 150 · C147 10n · B12.VI

Gl36 1N4448 C154 10n · C153 10n · B12.VII

Gl37 1N4448 · C157 10n · B12.VIII

C145 10n C146 10n — 4 dB

C151 10n C152 10n — 2 dB

C155 10n C156 10n — 1 dB

B12 74LS240

C172 10n C171 10n

+5V

74LS240

V_{CC} $\overline{OE}_2$ $\overline{OE}_1$ GND

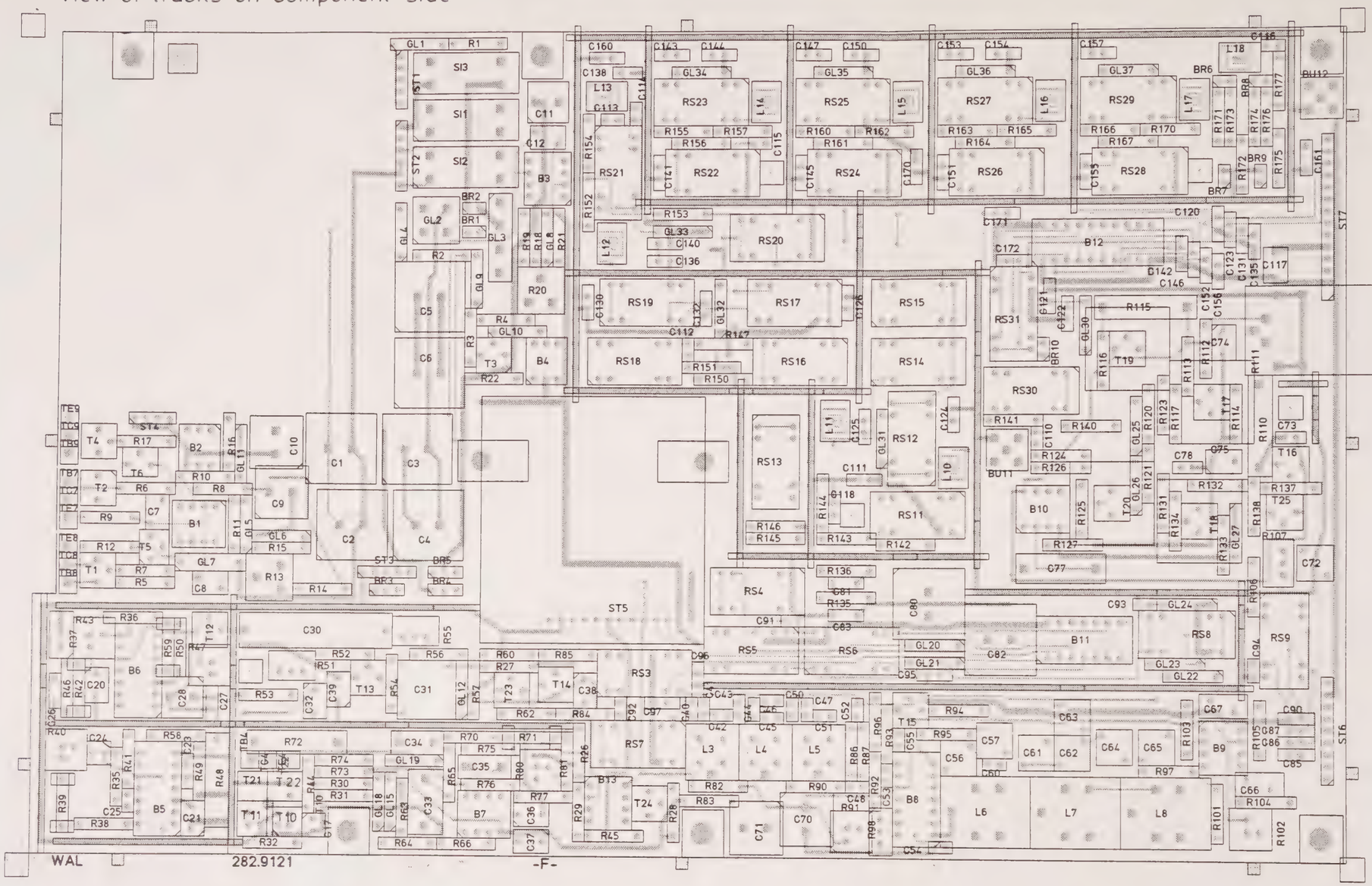
Blatt SHEET 3

Stromlauf zu Rauschquelle (schaltb. Dämpfungsgl.)

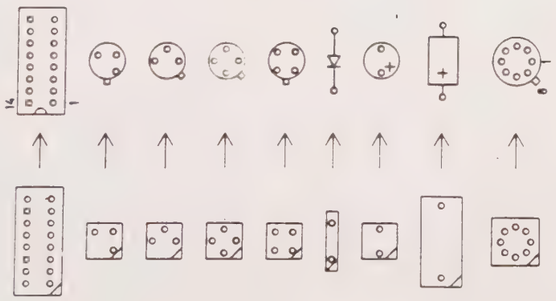
Zeichn. Nr. 282.9115 S

282 8819 V

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side



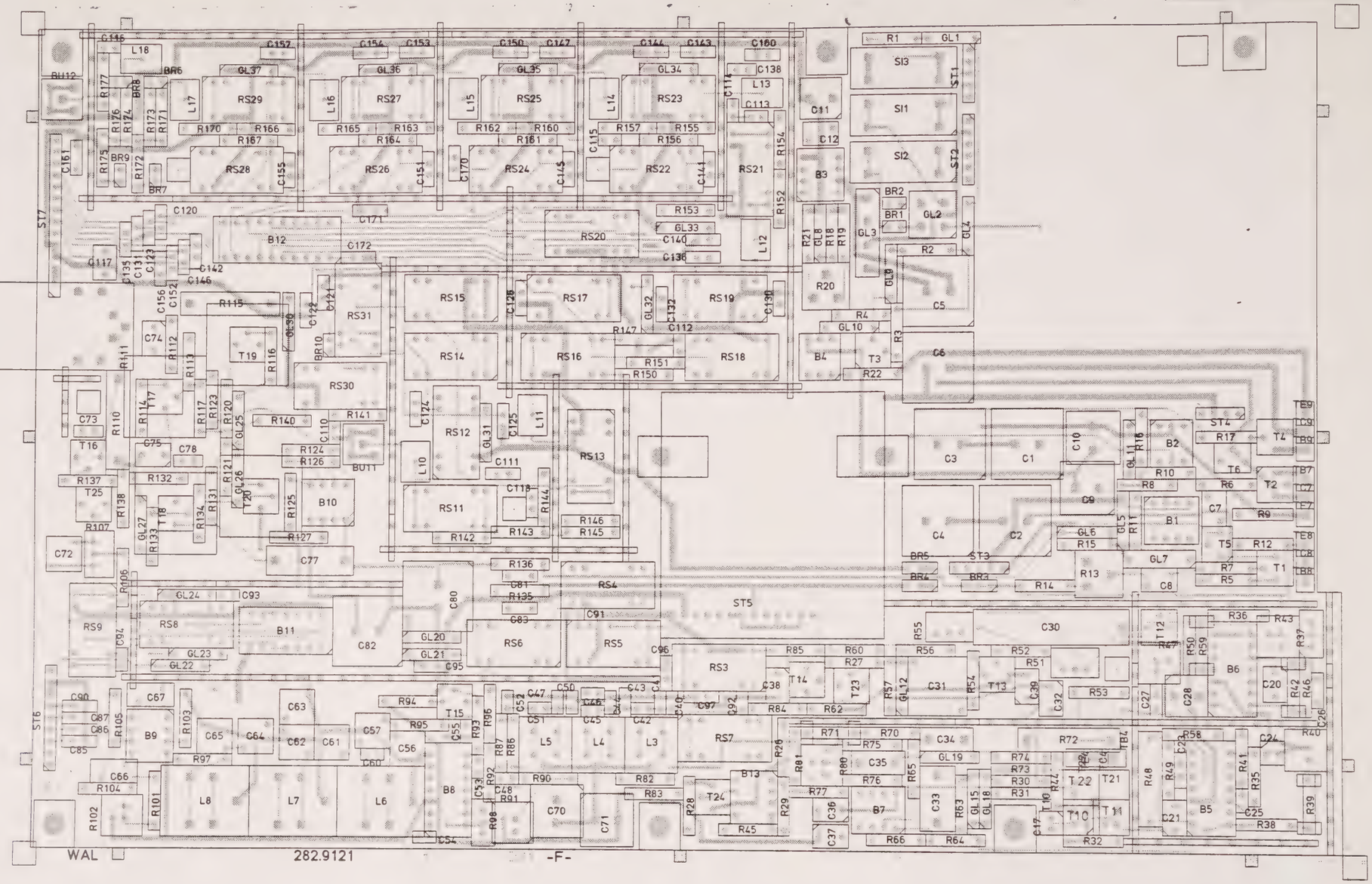
Symbolschlüssel

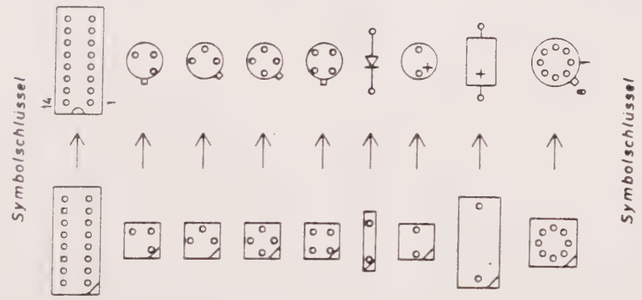


D	31193	11.83	BT	Maße ohne Toleranzangabe	Maßstab 1 : 1
E	31454	4.84	BT		Halbzeug, Werkstoff
				2FME Tag Name	Benennung: Rauschquelle
				Bearb 11.83 BT	Z
				Gepr	
				Norm	
And Zust.	Änderungs-Mitteilung	Tag	Name	ROHDE&SCHWARZ zu Gerät SUF2	Zeichn.-Nr. 282.9115 Blatt-Nr 2
				reg. \ 282.8819V	erste Z 282.8819 V B

Für diese Unterlage behalten wir uns alle Rechte vor

Ansicht und Leitungsführung Lötseite
View of tracks on solder side





D	31193	11.83 BT	Maße ohne Toleranzangabe		Maßstab 1 : 1	
E	31454	4.84 BT			Halbzeug, Werkstoff	
			2FME	Tag / Name	Benennung: Rauschquelle	Z
			Bearb	11.83 BT		
			Gepr			
			Norm			
Änd. Zust.	Änderungs-Mitteilung	Tag / Name	ROHDE&SCHWARZ		Zeichn.-Nr. 282.9115	Blatt-Nr. 3
			zu Gerät SUF 2		rep.-V. 282.8819V erste Z. 282.8819	v B.

Für diese Unterlage behalten wir uns alle Rechte vor

110 kHz 6MHz 50MHz RES

FERN

Pegel - Anzeige

EIN

Dekodieru

(+5V)

S1 S2 S3 S4

R1 220 R2 220 R3 220 R4 220

Gl 1

B 1

B 2

B 3

S 7

Bu 1 (Service)

Bu 2 (Betrieb)

Bu 3 (Service)

Bu 4 (Betrieb)

Bu 2 .1a .2a .1b .2b .7a .7b .4a .3b .3a .4b .5b .5a .6b .6a

Bu 6 .8a

Bu 4 .1a .1b .2a .2b .3a .3b .4a .4b .5a .5b .6a .6b .7a .7b .8a .8b

Bu 6 .3a .3b .7b .7a .6b

St 1 .1a .2a .1b .2b .7a .7b .4a .3b .3a .4b .5b .5a .6b .6a

St 3 .8a

St 2 .1a .1b .2a .2b .3a .4a .4b .5a .5b .6a .6b .7a .7b .8a .8b

St 3 .3a .3b .7b .7a .6b

+5V

Gl 3 Gl 2 Gl 1 Gl 4 1N4448

B 1 7417

R 1 10k R 2 10k R 3 10k R 4 10k

Gl 16 AAZ15

A

B 23.2 4030

B 2 14556

B 3 74LS298

B 5 4012

R 5 100k R 6 100k R 58 10k

B 4.3 74LS00

B 4.2 74LS00

B 4.1

R 7 270 C 2 10n

R 9 1,8k C 3 10n

R 50 220

R 8 5,6k

R 10 220 R 11 220 R 12 R 18 7×220 R 19 R 25 7×220

St 4 3 2 1 BR 1

B 8.3 74LS05

B 6 74LS247

B 7 74LS247

R 26 220

B 8.4 74LS05

Gl 15 Gl 16

B 8 74LS05

B 10.1 74LS38

R 66 3,3k R 62 5,6k

B 14.4 74LS05

B 8.5

R 28

B 10 74LS38

B 9 74LS74

R 27 270k C 4 1µ

B 11 4098

Gl 18 AAZ15 Gl 19 AAZ15

B 22.2 PIN 4

B 22 74[illegible]

B 12 74LS00 B 12.4 B 12.2 B 12.1 B 12.3

R 59 10k R 60 10k

B 14.2 B 14.3 74LS05

C 5 47µ

B 16 4029

B 19 14503 B 19.1 B 19.2

R 56.1 22k R 56.2 22k

R 55.1 100k R 55.2 100k

Bu 1 A 12 St 10.8 F1

A 10 St 10.6 F2

A 9 St 10.13 F/N

B 5 St 10.9 EIN

B 6 St 10.7 AUS

B 9 B 10 B 11 B 12

B 1 St 10.14 H1

A 1 St 10.16 Z4

Bandbreiten - Steuerung

Ein - Aus - Steuerung

ROHDE&SCHWARZ

Zeichn.-Nr. 282 95.15 S

	Name	Datum	Zust
1FME			A
gezeichnet	Bt	3 81	B
bearbeitet	Bt	12 83	C
geprüft	SR	4 84	D
normgepr	BT	185	

0 1 2 3 ZENTIMETER

Für diese Zeichnung behalten wir uns alle Rechte vor

g BCD → binar

Bedienplatte

282 9415

Bu5 1a 2a (Service)

Bu6 (Betrieb)

Netz

Oszillator 1/3 / 3 Hz

B 26 74LS22

B 22.6 74C914

B 22.4 74C914

B 14.5 74LS05

R42 100k

C10

Netz ein - Reset

hierzu 282.9415 SA
282.9515 SA

Digitalteil

282 9515

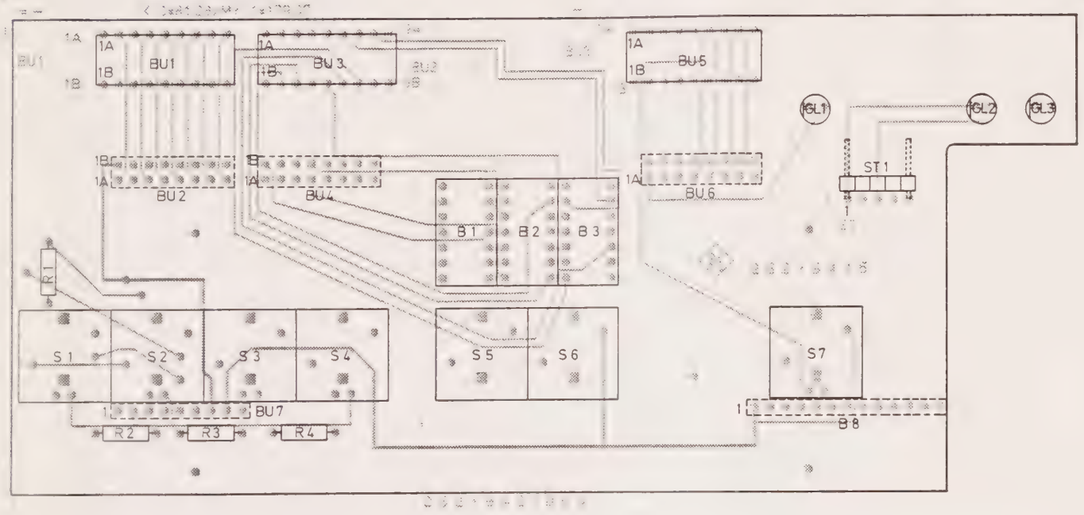
A3 A4 A6 A5 A7 A8

Z2 Z1 E4 E3 E2 E1 D/L O/F

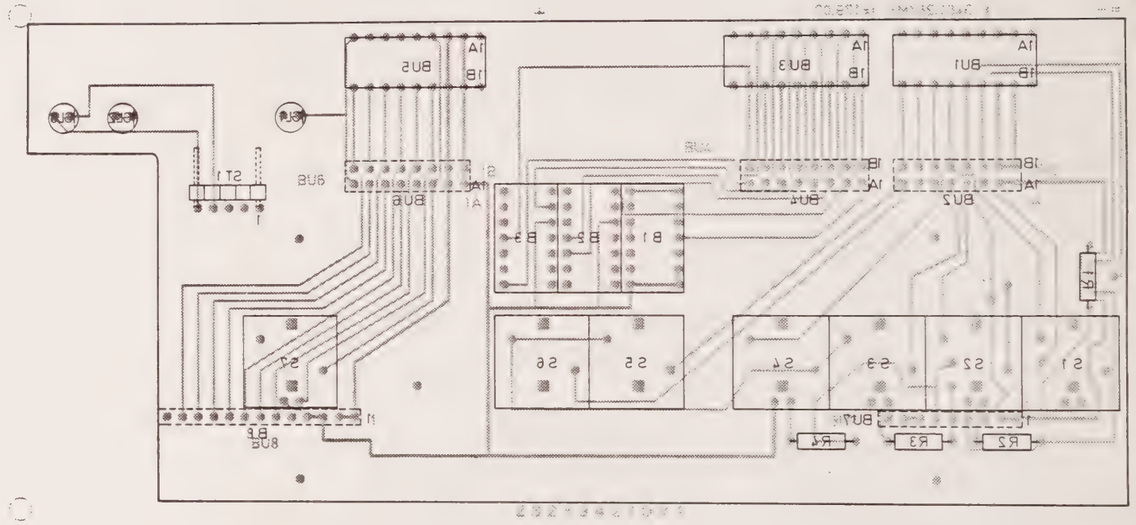
- Vo Vor - Ruckwartszahler / BCD - Speicher

RS	DIGITALTEIL (+BEDIENPLATTE)	282.9515 S
	282 8819 V	

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side



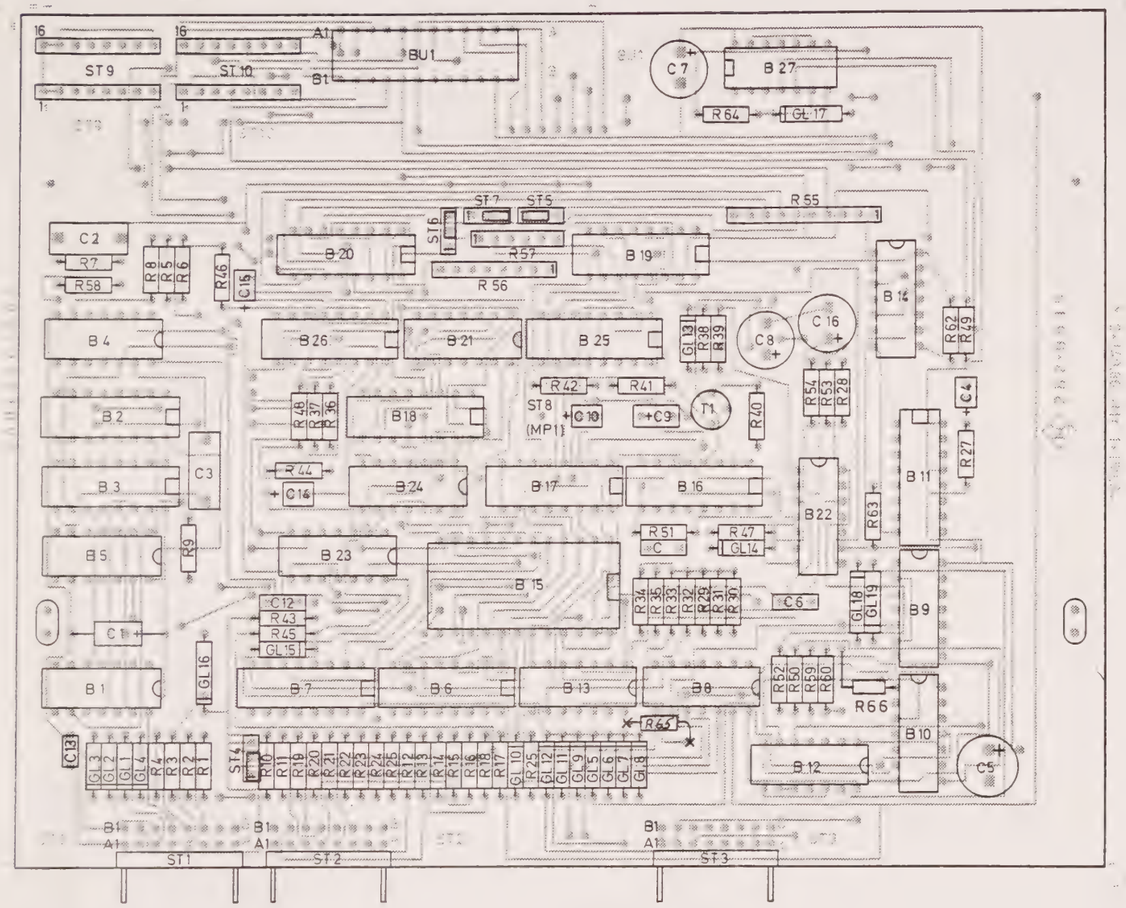
Ansicht und Leitungsführung Lötseite
View of tracks on solder side



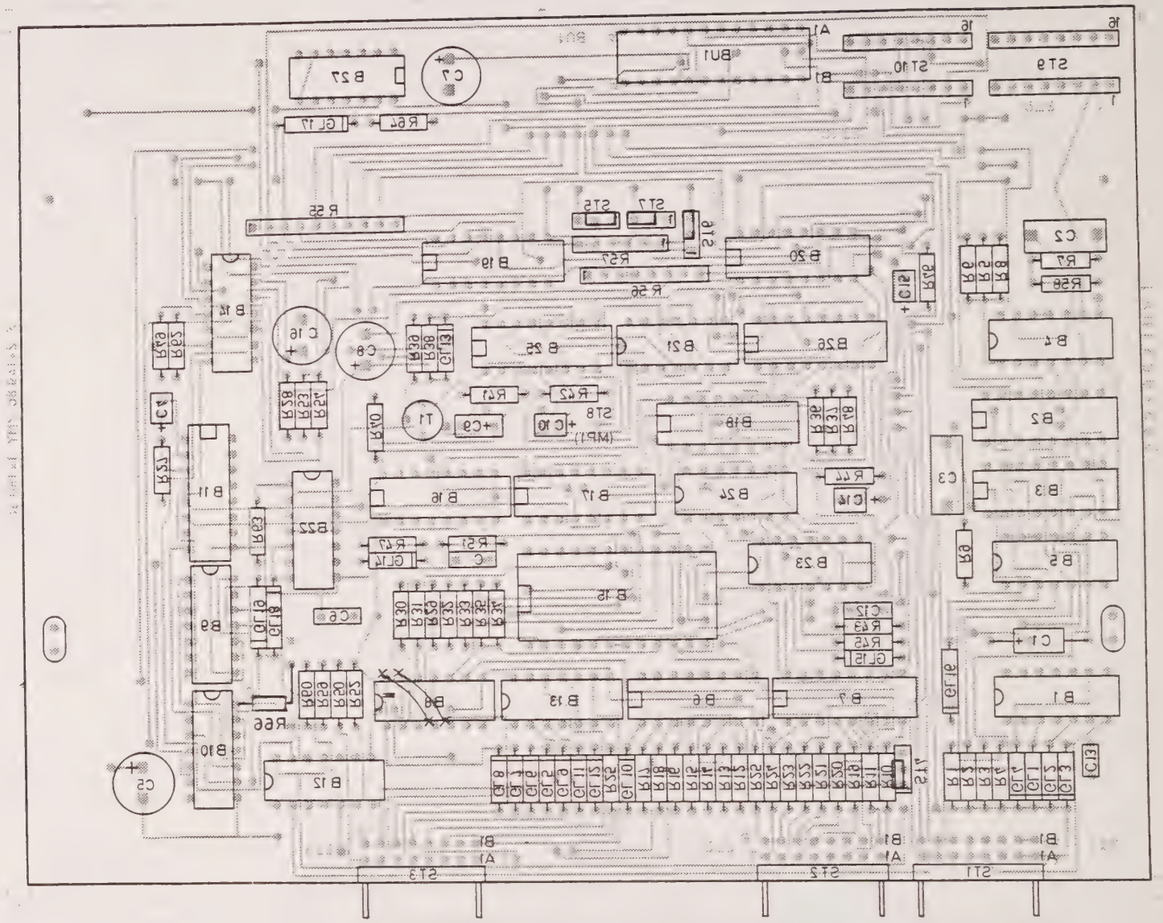
Versorg.-Nr.						/G-Sachnr	
				Maße ohne Toleranzangabe		Maßstab 1 : 1	
						Halbzeug, Werkstoff	
				1FME	Tag	Name	Benennung: Bedienplatte — Z
				Bearb	29.2.80	WL	
				Gepr.			
				Norm			
And Zust	Änderungs-Mitteilung	Tag	Name	ROHDE & SCHWARZ MÜNCHEN		Zeichn.-Nr. 282.9415	Blatt-Nr 2
				zu Gerät SUF2		Ersatz f. 282.8819 V	erste Z

Für diese Zeichnung behalten wir uns alle Rechte vor

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side



Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Versorg.-Nr						AG-Sachnr
F	27198	1.4.81		Maße ohne Toleranzangabe		Maßstab 1 : 1
J	31193 (1)	10.83	BT			Halbzeug, Werkstoff
K	31454	4.84	SR			
L	32278	1.85	BT			
				1FME	Tag	Name
				Bearb	1.4.81	
				Gepr		
				Norm		
And Zust	Änderungs-Mitteilung	Tag	Name	ROHDE & SCHWARZ MÜNCHEN		Benennung: Digitalteil
				zu Gerät: SUF 2		Zeichn.-Nr: 282.9515
						Blatt-Nr: 2
						Ers. f. 282.8819 V
						Ersatz f. 282.8819

Für diese Zeichnung behalten wir uns alle Rechte vor

493-2.000

	Datum	Name
gezeichnet	12	Gu
bearbeitet	12 79	Wk
geprüft		
normgepr.		

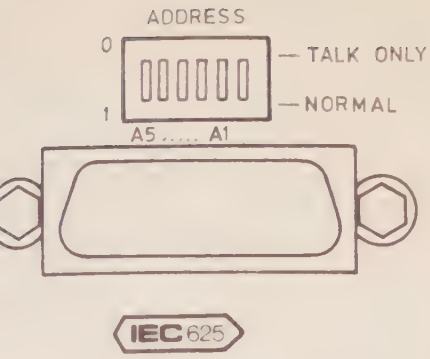
Änd.-zust.	Änd. Mitlg. Nr.	Datum	Name
A		12 79	Wk
B		1 80	Wk
C		3 80	Wk

Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

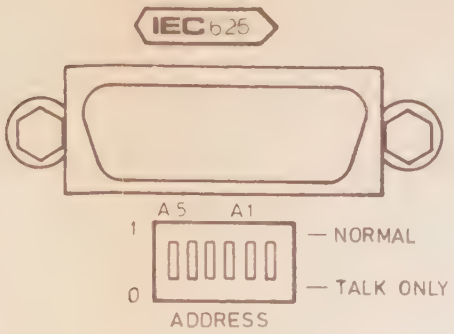
ROHDE & SCHWARZ . MÜNCHEN

Änd.-zust.	Änd. Mitlg. Nr.	Datum	Name

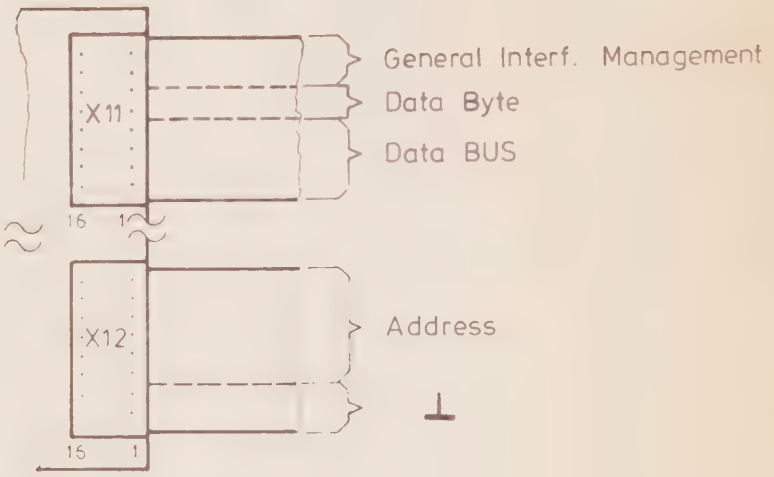
Änd.-zust.	Änd. Mitlg. Nr.	Datum	Name

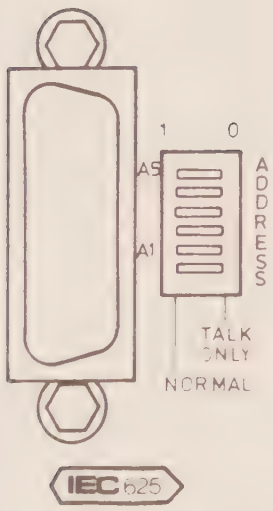


Version A

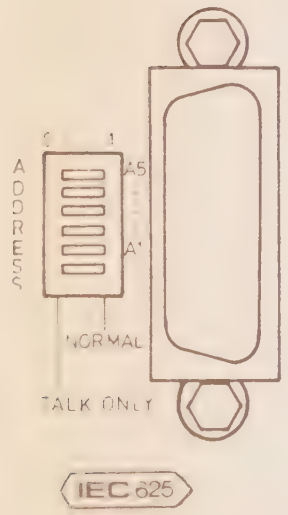


Version B





Version A



Version B

Stromlauf zu

IEC - 625 - PLATTE
IEC - 625 - board

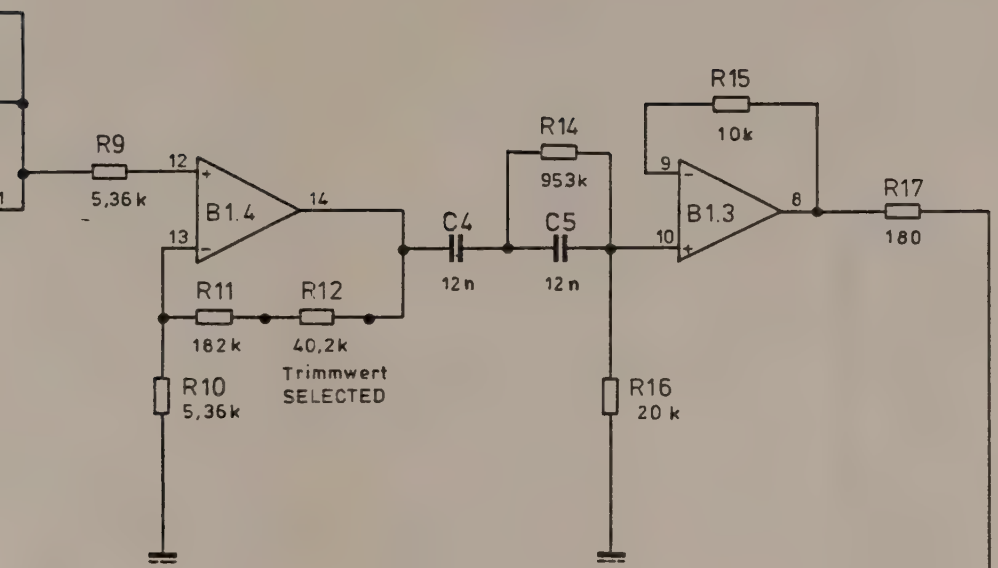
Z

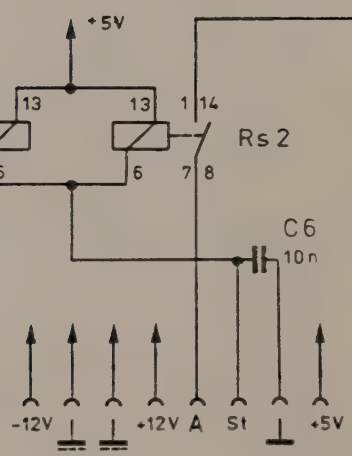
Zeichn. Nr. 238.2190 S

238.2019V

| | | |

B1 = TL 084





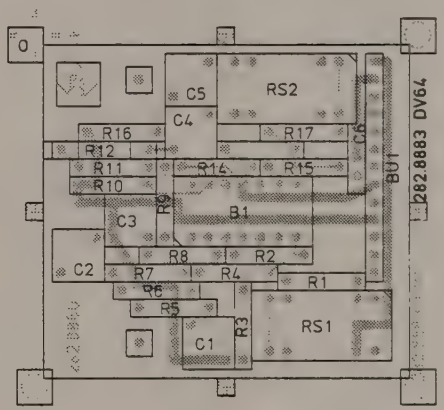
.13

Stromlauf zu
Telefoniekanalbelegung

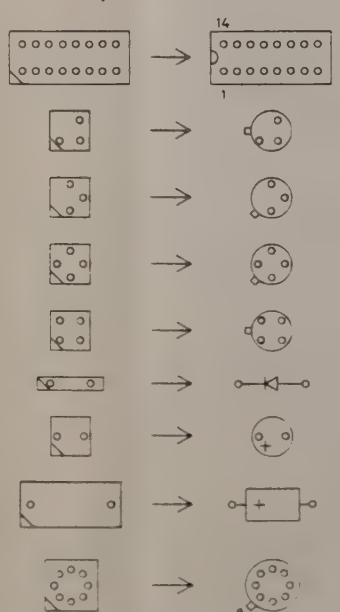
Zeichn. Nr 282.8860 S

reg. i.V 282.8819V | erste Z 282.8819

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side

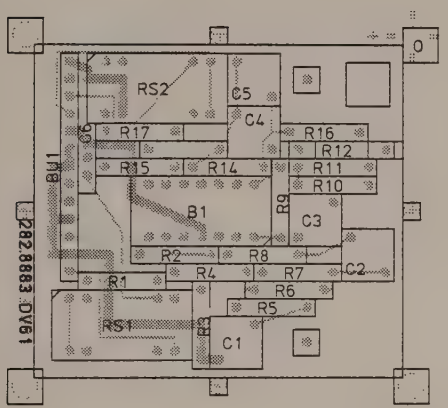


Symbolschlussel



Für diese Zeichnung behalten wir uns alle Rechte vor.

Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Versorg.-Nr.			VG-Sachnr
	Maße ohne Toleranzangabe		Maßstab 1 : 1
			Halbzeug, Werkstoff
	1FM	Tag	Name
	Bearb	7.80	BT
	Gepr		
	Norm		
			Benennung: Telefoniekanalbelegung — Z
	ROHDE & SCHWARZ MUNCHEN		Zeichn.-Nr 282.8860 — Blatt-Nr 2
And Zust / Änderungs-Mitteilung / Tag / Name	zu Gerät SUF 2-Z7		rea / 282.8819 V — erste Z 282.8819

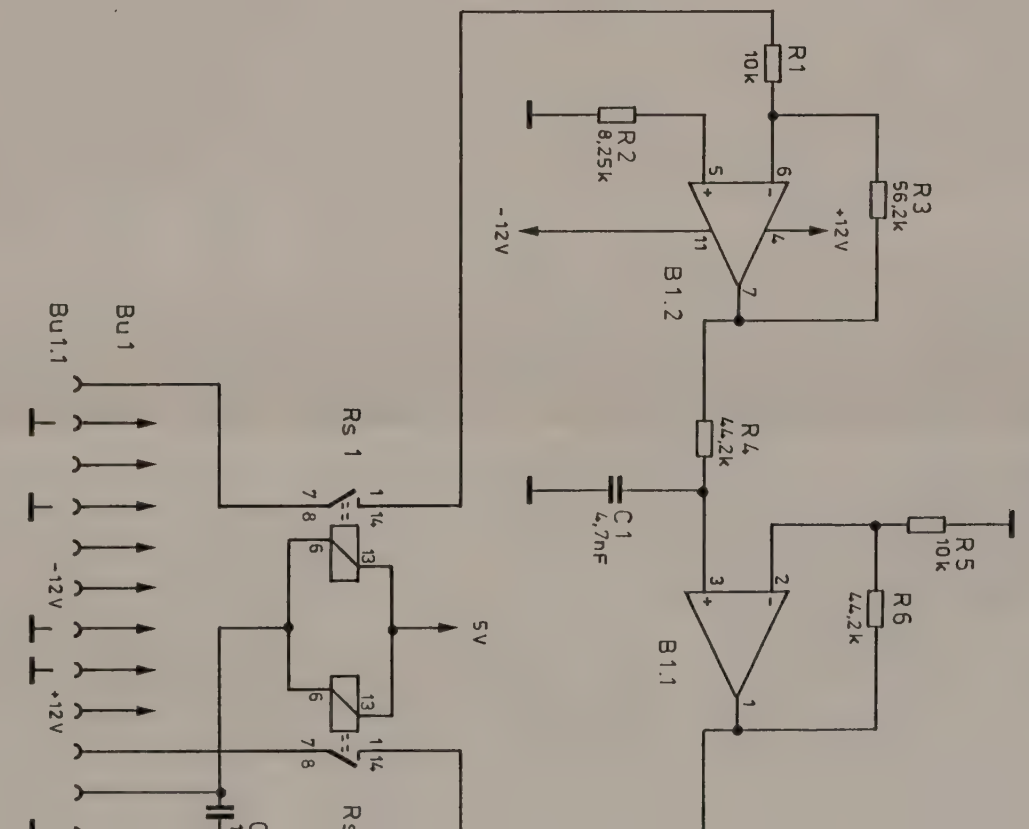
TYPE	Datum	Name	zust	Nr	Datum	Name
gezeichnet	1.80	Ba	A	26229	6.80	BT
bearbeitet	1.80	Bü				
geprüft						
normgepr						

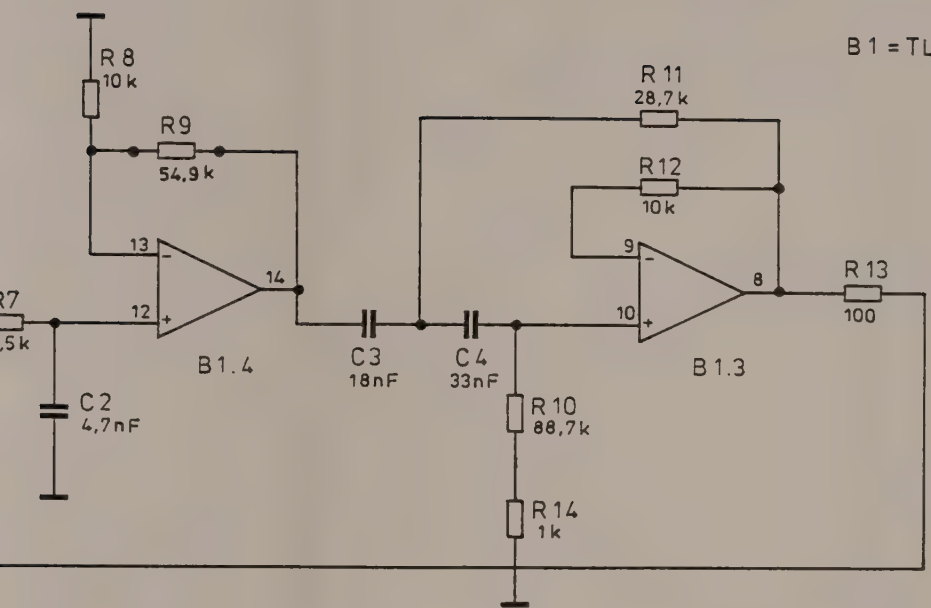
Diese Zeichnung ist unser Eigentum Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig

ROHDE & SCHWARZ · MÜNCHEN

zust	Nr	Datum	Name

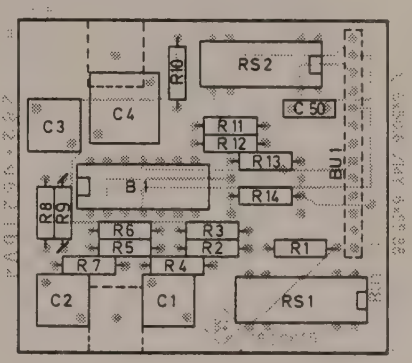
zust	Nr	Datum	Name



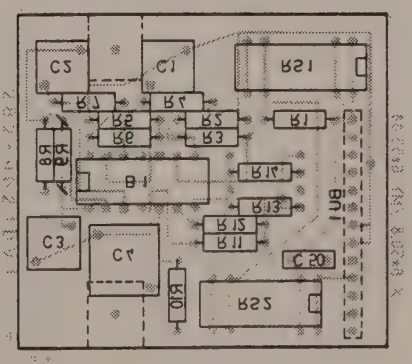


Stromlauf zu	CCIR - REC - 559	Zeichn. Nr. 282.9615 S	
		reg. i.V. 282.8819 V	erste Z. 282.8819

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side



Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Für diese Zeichnung behalten wir uns alle Rechte vor

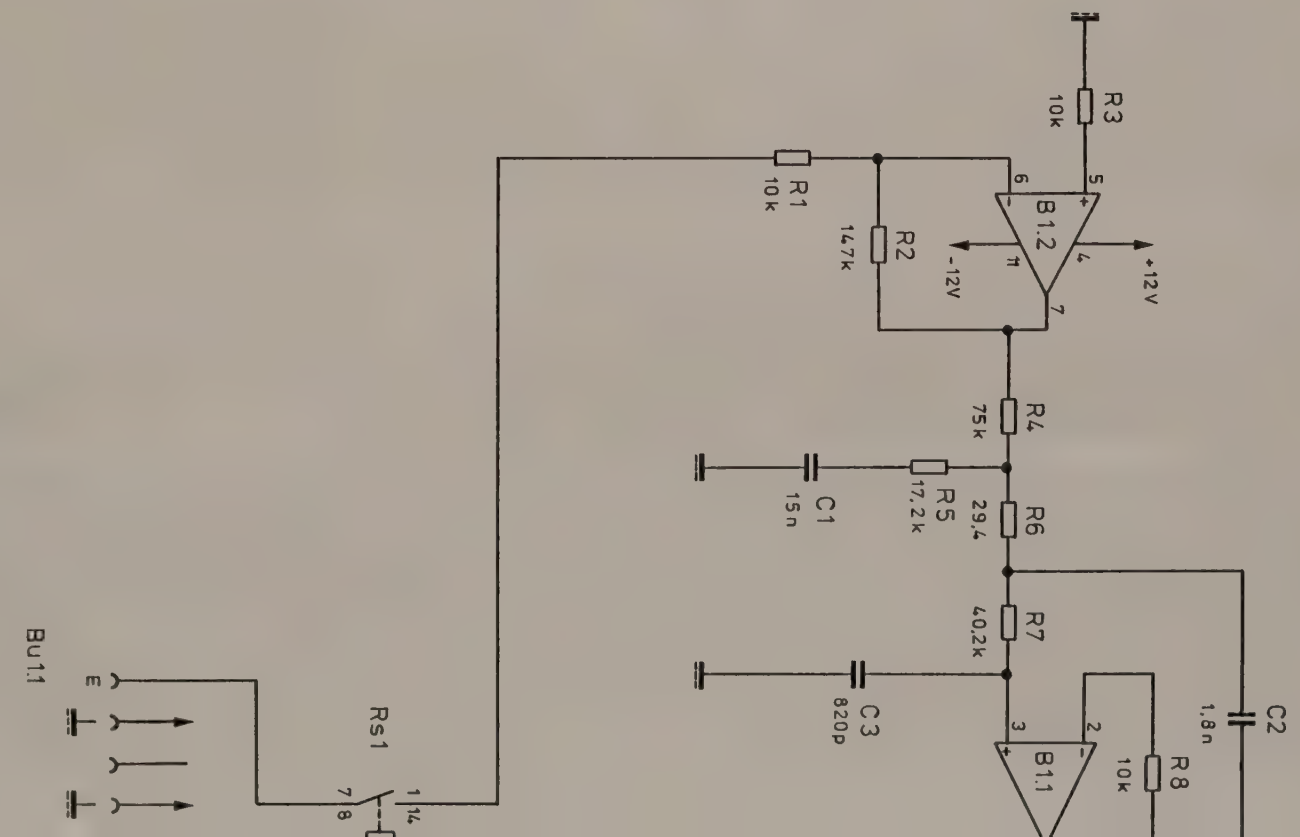
A	26 229	6.80	BT	Maße ohne Toleranzangabe		Maßstab 1 : 1	
						Halbzeug, Werkstoff	
				1FME	Tag	Name	Benennung
				Bearb.	28.2.80	WL	CCIR - REC - 559 Z
				Gepr.			
				Norm			
				ROHDE&SCHWARZ		Zeichn.-Nr. 282.9615	Blatt-Nr 2 v Bl
Änd. Zust.	Änderungs-Mitteilung	Tag	Name	zu Gerat SUF 2		reg. i V. 282.8819V	erste Z. 282.8819

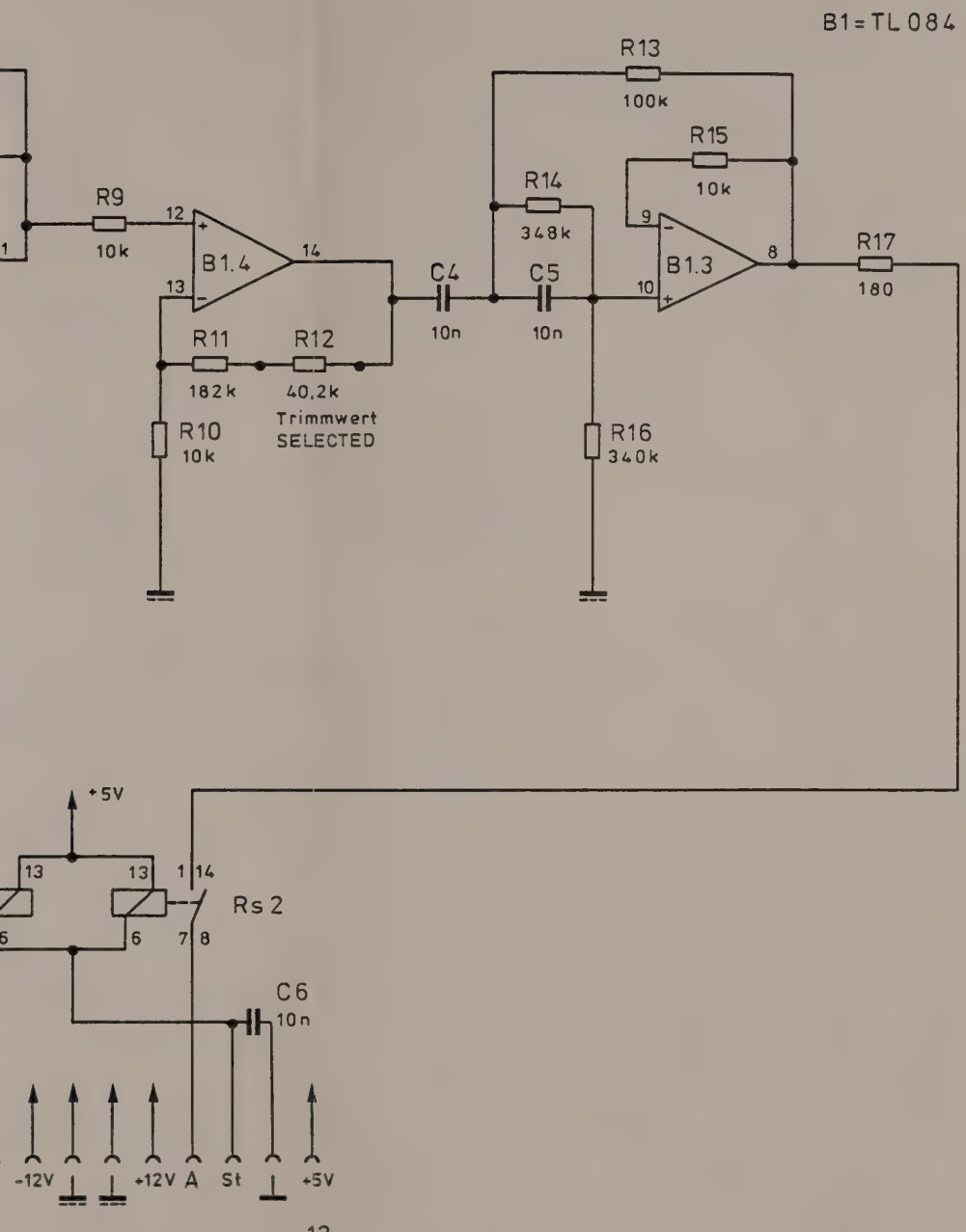
1FME	Datum	Name	Änd-zust	Änd-Mitg Nr	Datum	Name
gezeichnet	[illegible]0	DP				
bearbeitet	4.80	DP				
geprüft						
normgepr						

Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig

ROHDE & SCHWARZ · MÜNCHEN

Änd-zust	Änd-Mitg Nr	Datum	Name	Änd-zust	Änd-Mitg Nr	Datum	Name





.13

Stromlauf zu

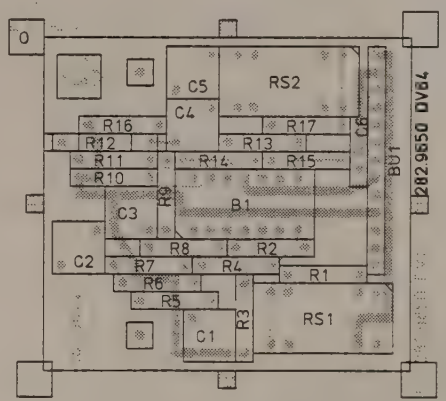
CCIR-REC-571-FILTER/SUF 2-Z5

Zeichn. Nr. 282.9644 S

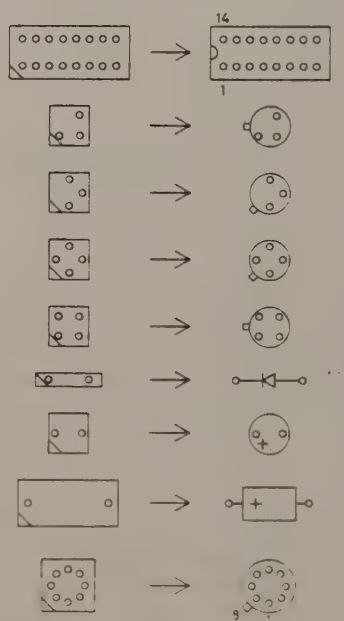
reg. i.V. 282.8819V

erste Z. 282.8819

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side

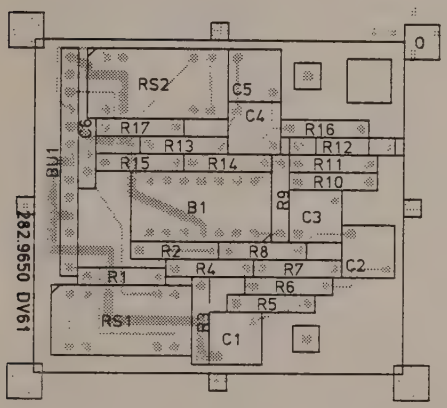


Symbolschlussel



Für diese Zeichnung behalten wir uns alle Rechte vor.

Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Versorg.-Nr			ZG-Sachnr
	Maße ohne Toleranzangabe		Maßstab 1 : 1
			Halbzeug, Werkstoff
	1FM / Bearb / Gepr / Norm	Tag: 6.80	Name: Dp
			Benennung: CCIR-REC-571-Filter
	ROHDE & SCHWARZ MÜNCHEN		Zeichn.-Nr: 282.9644
			Blatt-Nr: 2
And Zust / Änderungs-Mitteilung / Tag / Name	Zu Gerät SUF 2-Z 5		Ersatz f. V 282.8819 V / Erste Z 282.8819

EIN/AUS
IN/OFF
St3
R1
10k
B2 I
74LS14
C1
1µ
R5
10k
B1
7474
R2
10k
R3
10k
Verbindung im Stecker
LINKED IN CONNECTOR
AUS (OFF)
EIN (ON)
Rückmeldung
FERN
REMOTE
SELECTED
(LED)
R4
100
Bu4
B5 II
B5 I
4011
B4 II
Br1
St4
Br4
Br7
Br10
I/O
St5
D/L ANFANG
D/L BEGIN
St6
D/L ENDE
D/L END
St7
A B C
4
B2 II
+5V
S11
O/F
F/N

O/F	ORT/FERN	LOCAL/REMOTE
F/N	FILTER	NETWORK
F1 F2	2 BIT FILTER-CODE	
D/L	DÄMPFUNG	LEVEL
I	EIN	ON
O	AUS	OFF

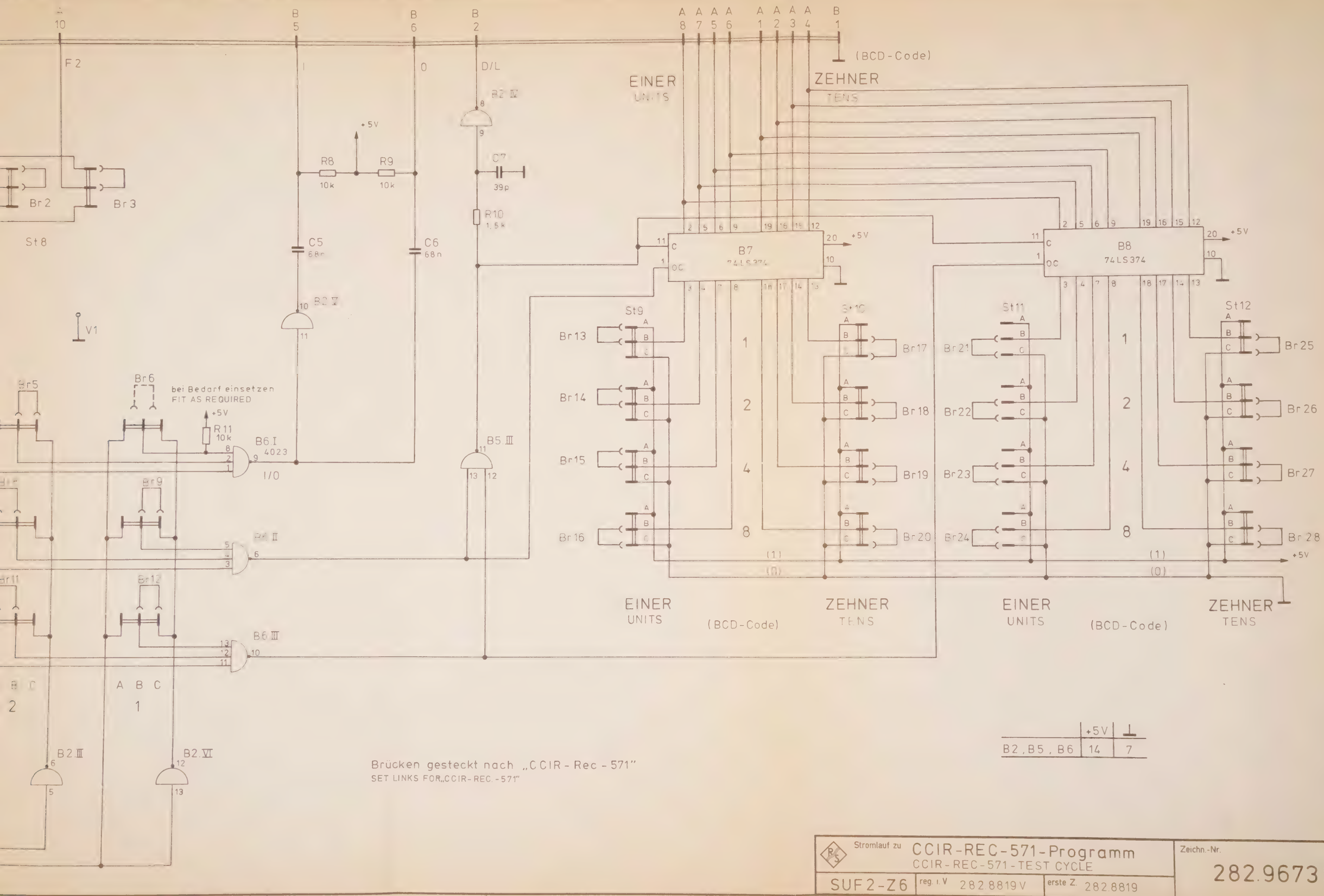
Für diese Zeichnung behalten wir uns alle Rechte vor

ROHDE&SCHWARZ

Zeichn.-Nr. 282 9673 S

	Name	Datum	And Mittlg Nr	And zust
1FME				
gezeichnet	Bt			
bearbeitet	Be			
geprüft	Dr			
normgepr				

PF 095 4115 - 1079

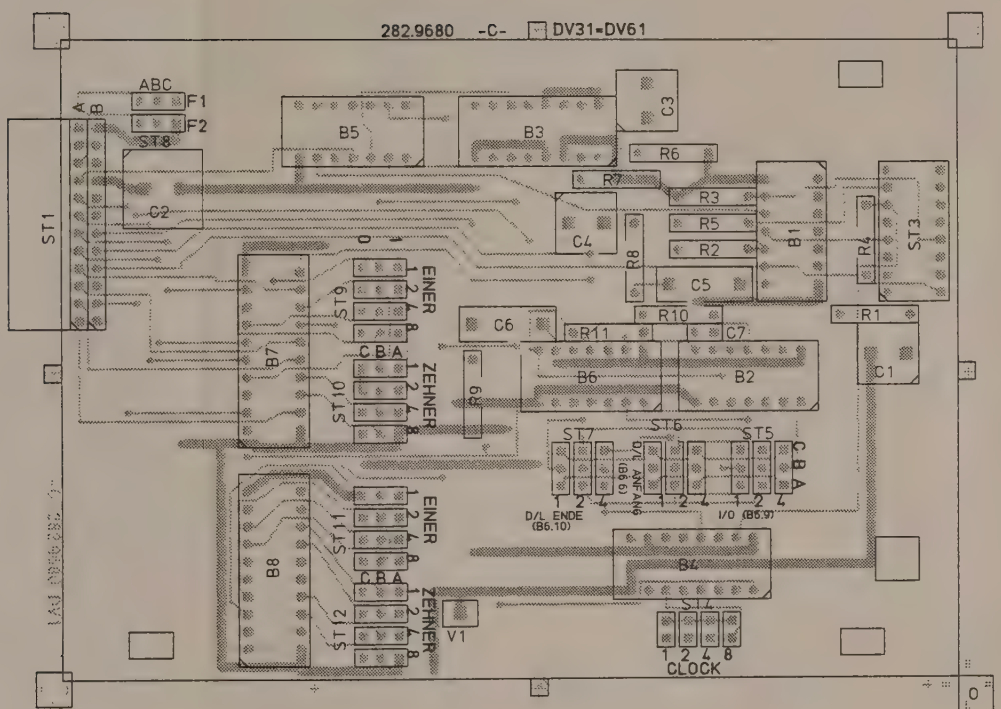


	+5V	⊥
B2, B5, B6	14	7

Brücken gesteckt nach „CCIR-Rec-571"
SET LINKS FOR „CCIR-REC.-571"

Stromlauf zu CCIR-REC-571-Programm CCIR-REC-571-TEST CYCLE			Zeichn.-Nr. 282.9673S	Blatt-Nr 1
SUF2-Z6	reg. i.V 282.8819V	erste Z. 282.8819		V 1 Bl

Ansicht und Leitungsführung Lötseite
View of tracks on solder side



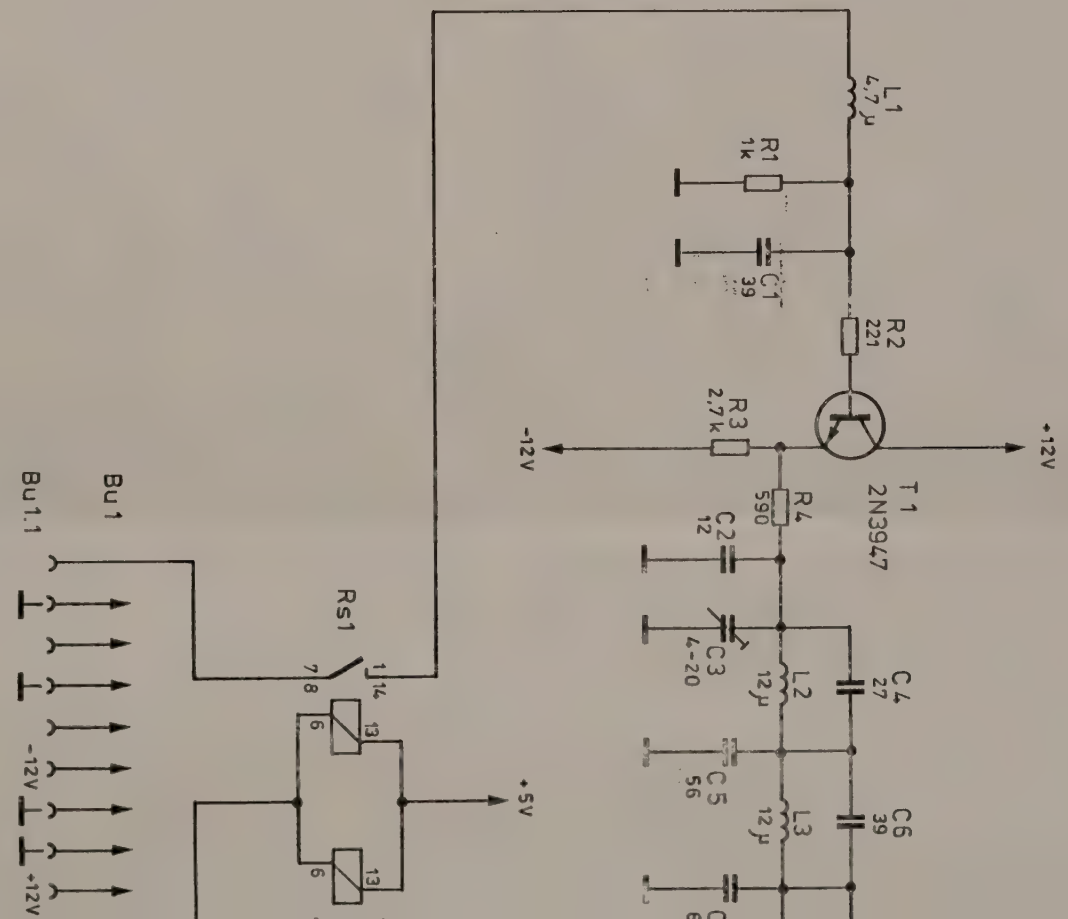
A	28242	1.82	BT	Maße ohne Toleranzangabe		Maßstab 1 : 1	
						Halbzeug, Werkstoff	
				1FM	Tag	Name	Benennung CCIR-REC-571-Programm Z
				Bearb	1.82	BT	
				Gepr			
				Norm			
				ROHDE & SCHWARZ		Zeichn.-Nr 282.9673	Blatt-N. 2
And Zust	Anderungs-Mitteilung	Tag	Name	zu Gerat SUF 2 Z6		reg i V 282.8819 V	erste Z 282.8819 v BI

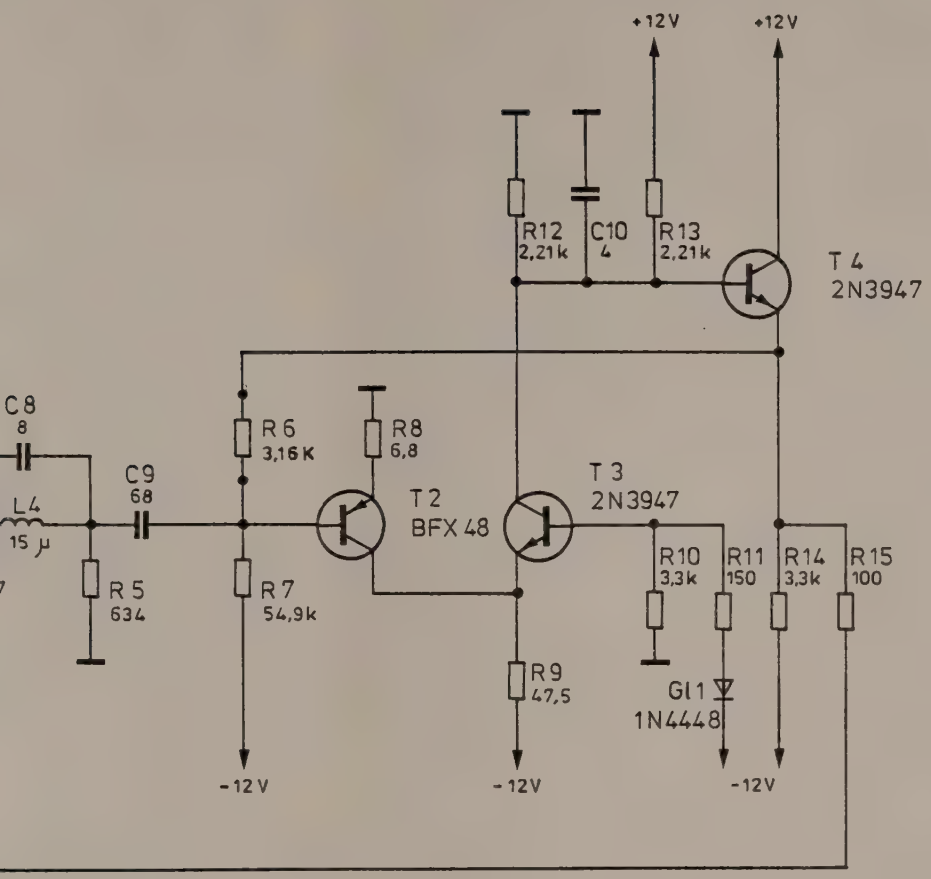
1FME	Datum	Name	And.-zust	And.-Mitlg Nr	Datum	Name
gezeichnet	[illegible]0	Ba				
bearbeitet	1.80	Bü				
geprüft						
normgepr						

Diese Zeichnung ist unser Eigentum Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig

ROHDE & SCHWARZ · MÜNCHEN

And.-zust	And Mitlg. Nr	Datum	Name	And zust	And Mitlg Nr	Datum	Name





Rs 2

C11
10n

St +5V .13

Stromlauf zu

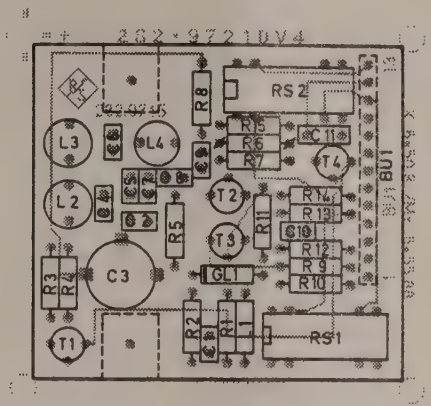
DREIECKRAUSCHEN

Zeichn. Nr. 282.9715 S

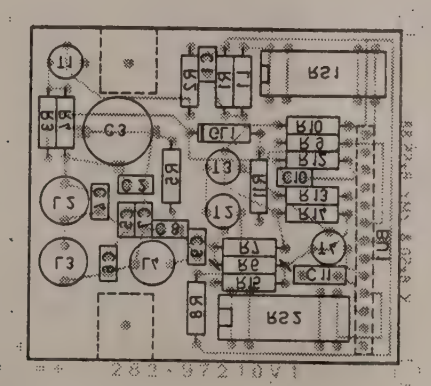
reg. i.V. 282.8819 V | erste Z. 282.8819

5 6 7 8

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side



Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Für diese Zeichnung behalten wir uns alle Rechte vor

				Maße ohne Toleranzangabe		Maßstab 1 : 1	
						Halbzeug, Werkstoff	
				1FME	Tag	Name	Benennung: Dreiecksrauschen — Z
				Bearb.	28.2.80	WL	
				Gepr.			
				Norm			
Änd. Zust.	Änderungs-Mitteilung	Tag	Name	ROHDE&SCHWARZ		Zeichn.-Nr. 282.9715	Blatt-Nr. 2 v. Bl
				zu Gerät SUF 2		reg. i. V. 282.8819 V	erste Z. 282.8819

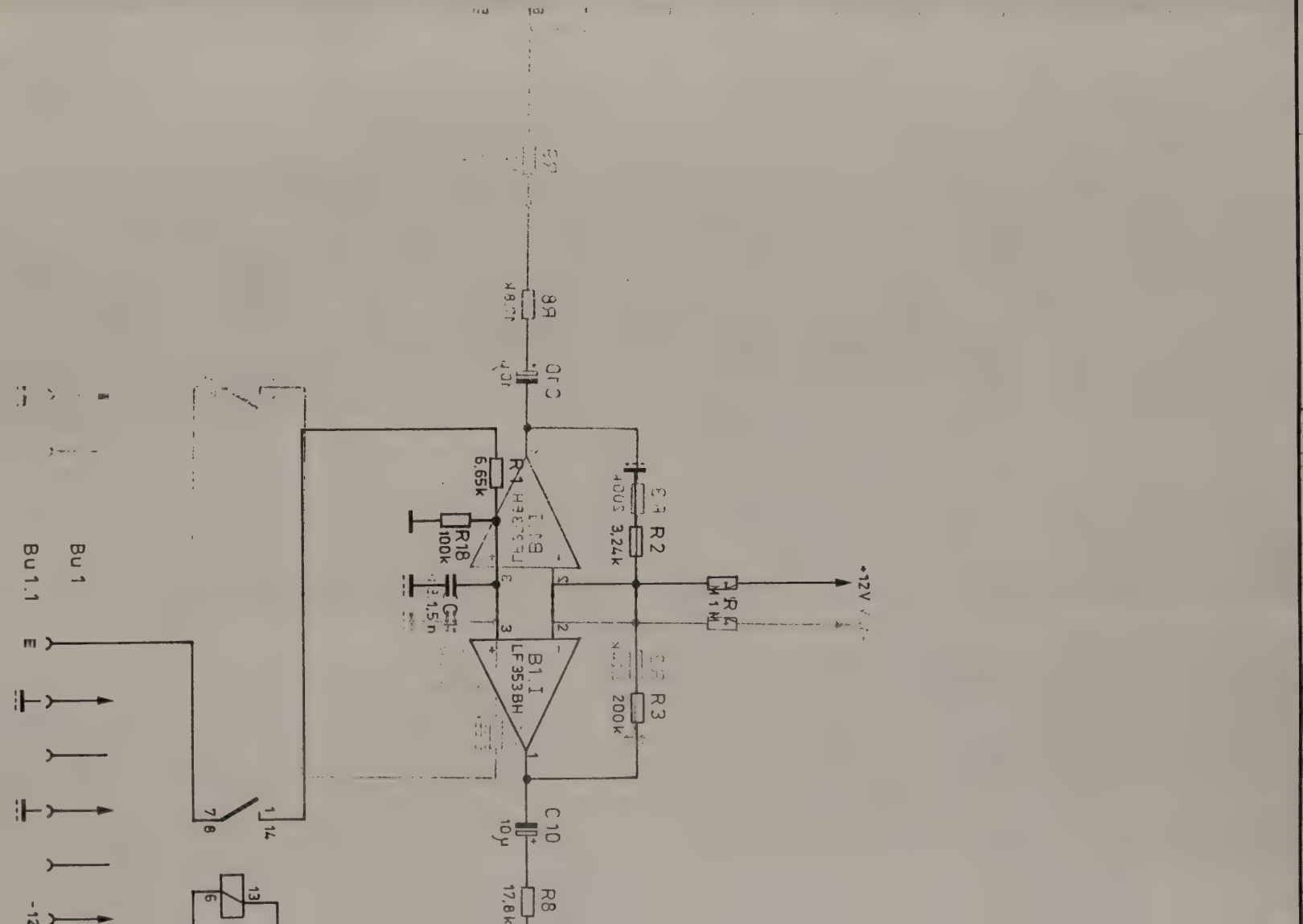
1FME	Datum	Name	Änd-zust	Änd.-Mitlg. Nr	Datum	Name
gezeichnet	2.80	Ba	A	27198	4.81	BT
bearbeitet	2.80	Bü				
geprüft						
normgepr						

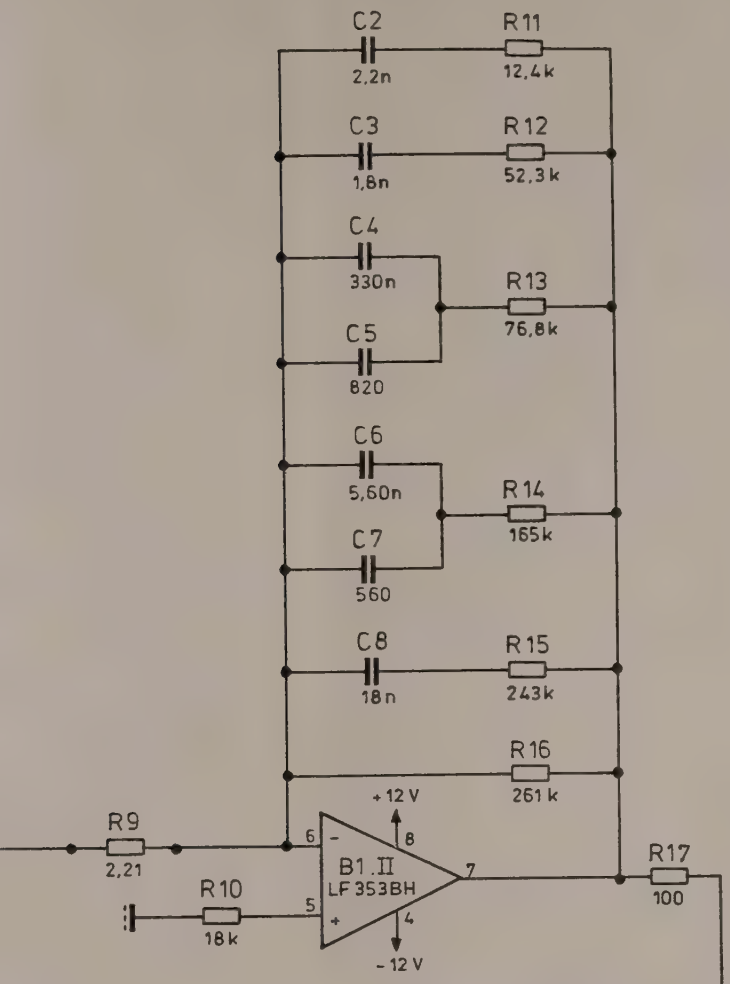
Diese Zeichnung ist unser Eigentum Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig

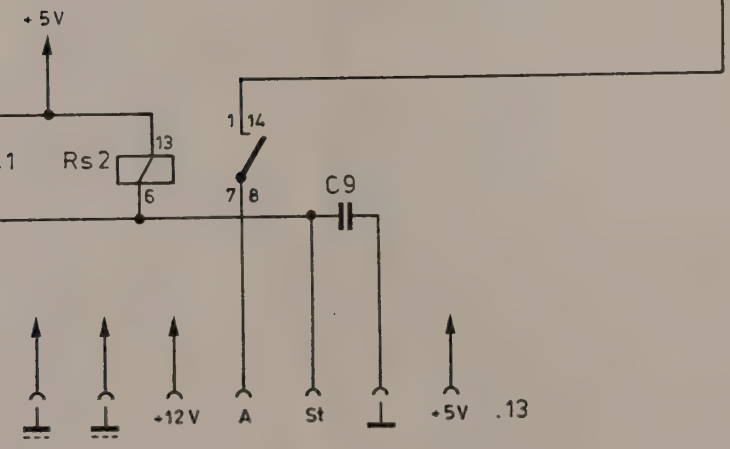
ROHDE & SCHWARZ · MÜNCHEN

Änd-zust	Änd. Mitlg. Nr	Datum	Name	Änd-zust	Änd. Mitlg. Nr	Datum	Name

PF 0954096







Stromlauf zu Rosa Rauschen SUF 2

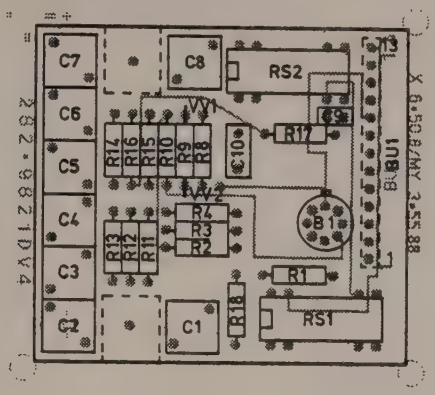
Zeichn. Nr. 282.9815 S

reg i.V 282.8819V

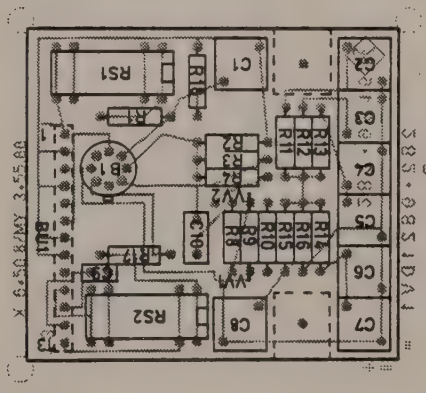
erste Z. 282.8819

PGH 15177

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side

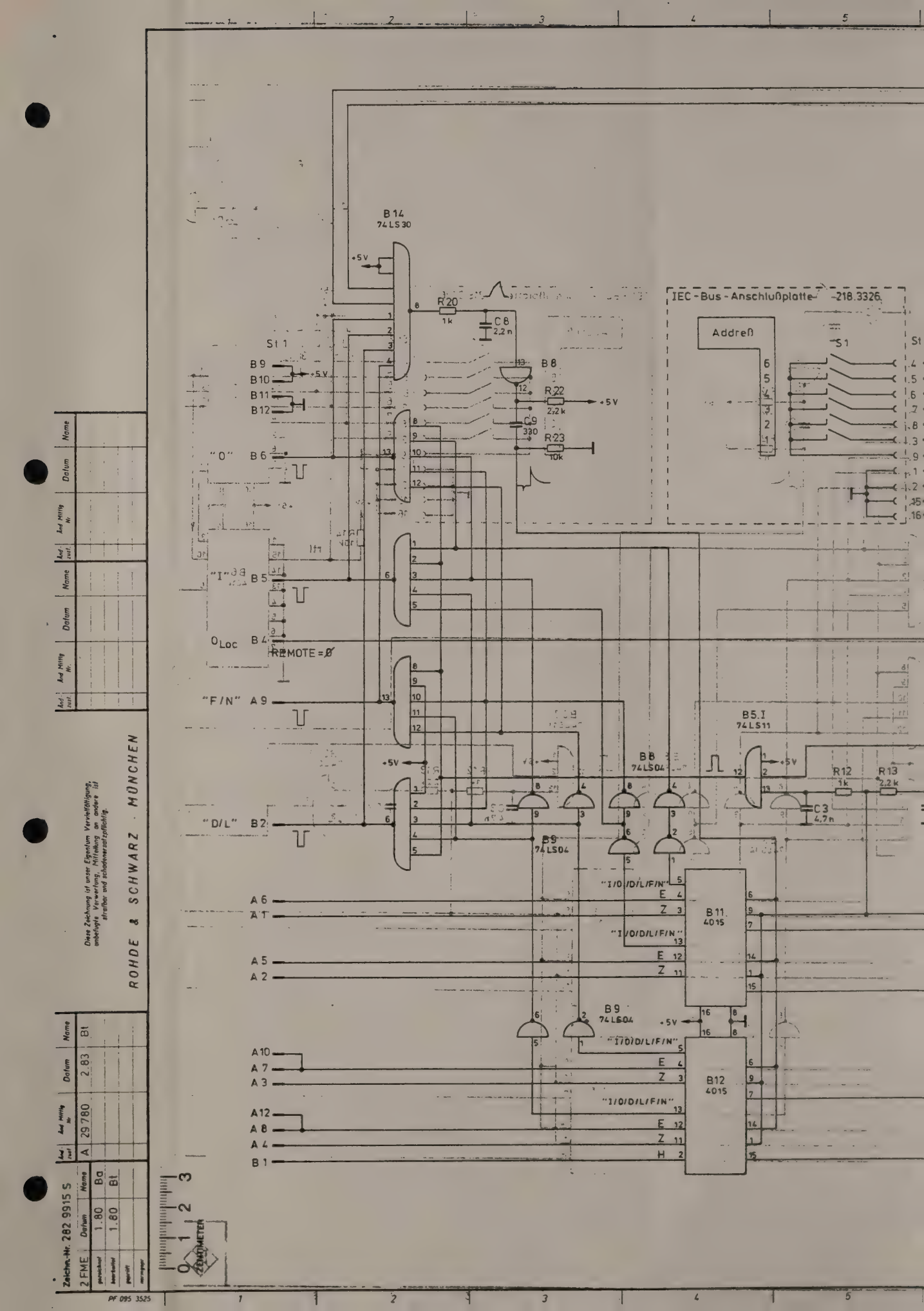


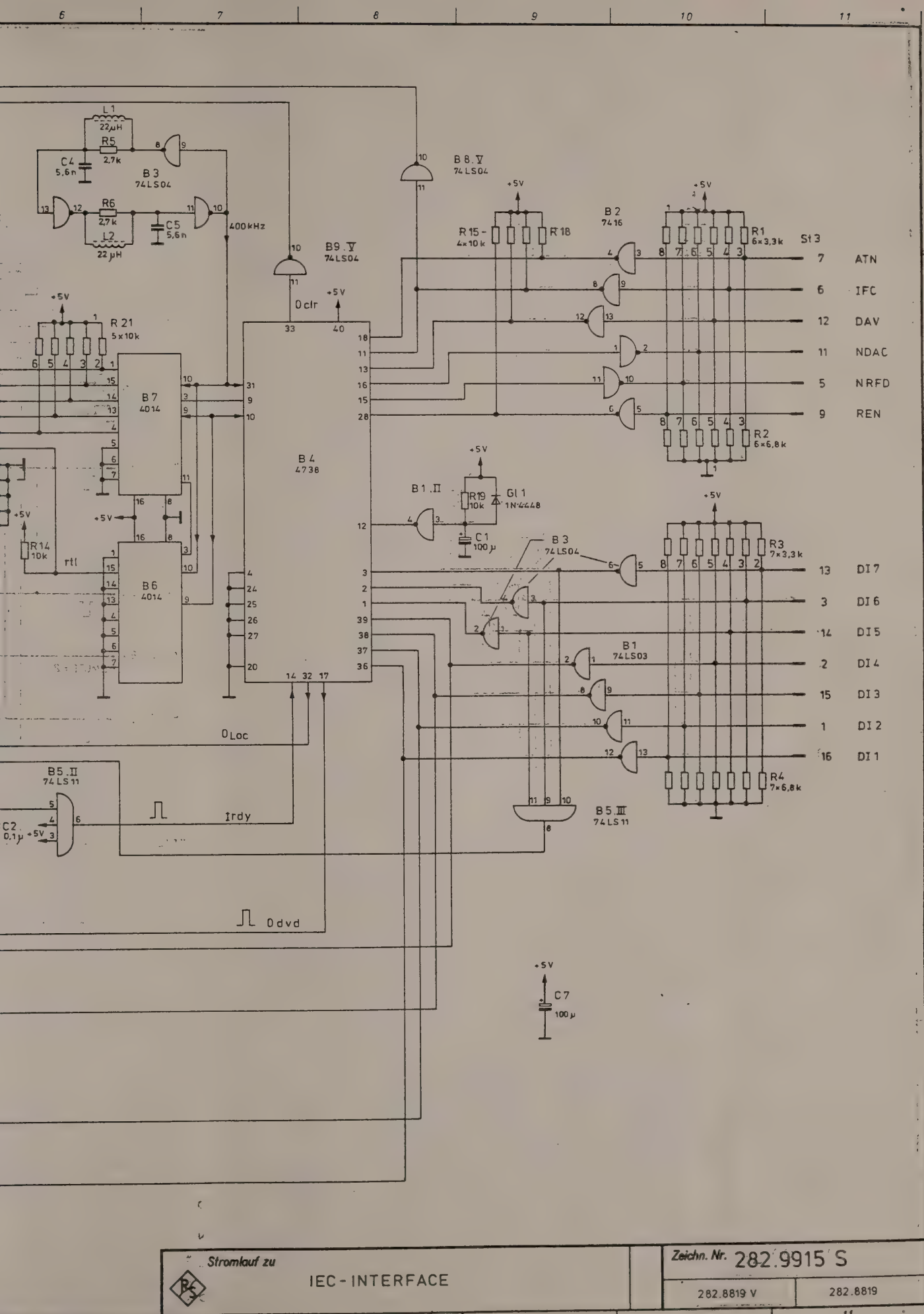
Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Für diese Zeichnung behalten wir uns alle Rechte vor

B	28272	20.1.82	BT	Maße ohne Toleranzangabe		Maßstab 1 : 1	
						Halbzeug, Werkstoff	
				1FME	Tag	Name	Benennung
				Bearb.	20.1.82	BT	Y7 Rosa Rauschen Z
				Gepr.			
				Norm			
Änd. Zust.	Änderungs-Mitteilung	Tag	Name	ROHDE&SCHWARZ		Zeichn.-Nr. 282.9815	Blatt-Nr 2 v. BI
				zu Gerät SUF2		reg. i. V. 282.8819 V	erste Z. 282.8819


B14
74LS30
+5V
R20
1k
C8
2,2n
S1 1
B9
B10
B11
B12
"0" B6
"I" B5
0Loc B4
REMOTE=Ø
"F/N" A9
"D/L" B2
B8
R22
2,2k
C9
330
R23
10k
IEC - Bus - Anschlußplatte -218.3326
Addreß
S1
B5.I
74LS11
B8
74LS04
B9
74LS04
R12
1k
R13
2,2k
C3
4,7n
"I/O/D/L/F/N"
B11
4015
B12
4015
A6
A1
A5
A2
A10
A7
A3
A12
A8
A4
B1
E
Z
H
ROHDE & SCHWARZ · MÜNCHEN
Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.
Name
Datum
Änd. Mitteilg. Nr.
Änd. zust.
A 29780 2.83 Bt
Zeichn.-Nr. 282 9915 S
2 FME
gezeichnet 1.80 Ba
kontrolliert 1.80 Bt
freigabe
Maßstab
0 1 2 3
ZENTIMETER
PF 095 3525



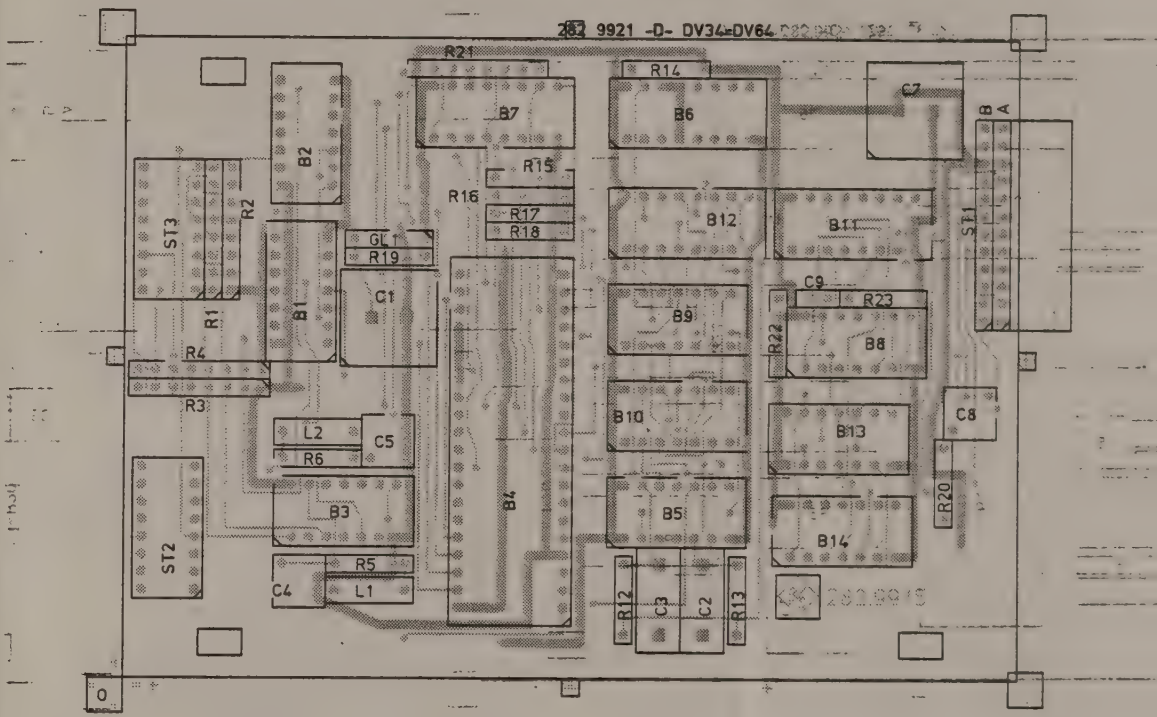
Stromlauf zu

IEC-INTERFACE

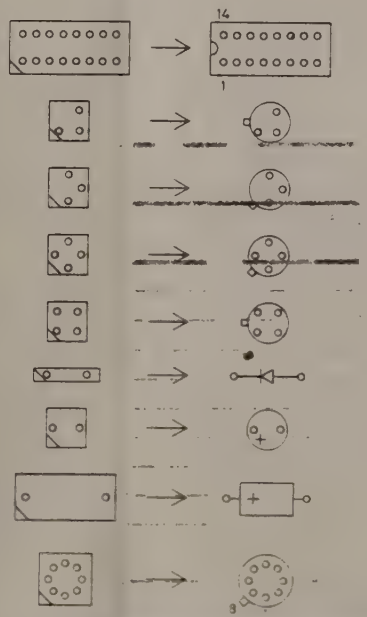
Zeichn. Nr. 282.9915 S

282.8819 V | 282.8819

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side

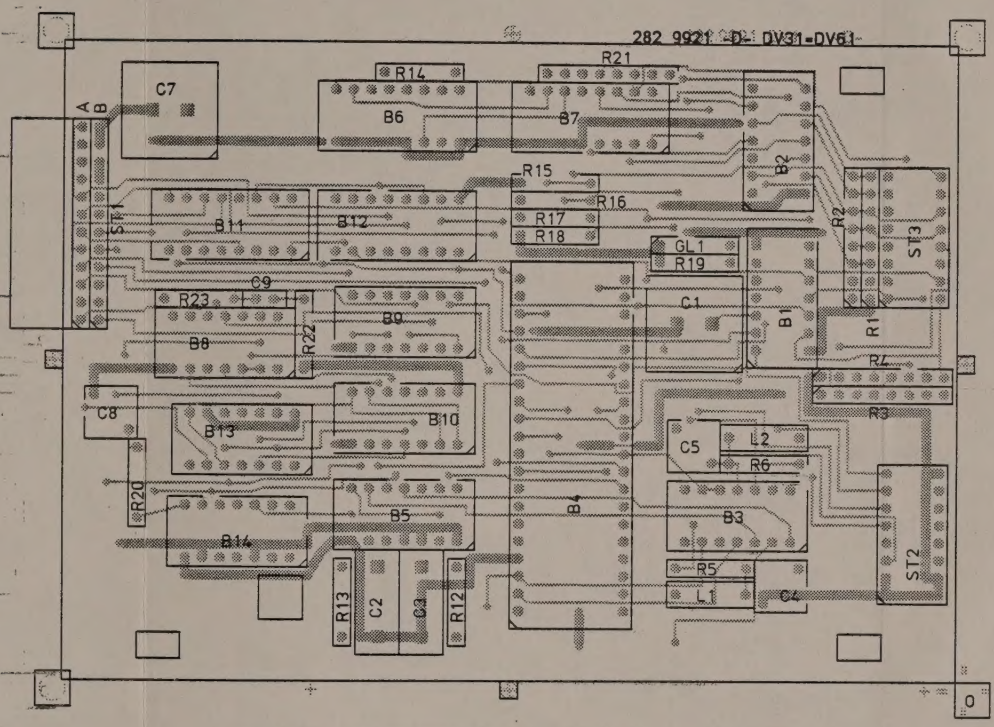


Symbolschlussel



Für diese Zeichnung behalten wir uns alle Rechte vor.

Ansicht und Leitungsführung Lötseite
View of tracks on solder side



Versorg.-Nr.				VG-Sachnr.	
			Maße ohne Toleranzangabe	Maßstab 1 : 1	
				Halbzeug, Werkstoff	
			1FM / Tag / Name	Benennung	
			Bearb. 5.80 BT	IEC-INTERFACE	Z
			Gepr.		
			Norm		
			ROHDE & SCHWARZ MÜNCHEN	Zeichn.-Nr 282.9915	Blatt-Nr 2
And. Zust.	Anderungs-Mitteilung	Tag	Name	zu Gerat SUF 2	reg. i. V 282.8819 V erste Z. 282.8819

5 6 7 8

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side

MP MASTER
MA23928